



**A SPACE FOR THE DISPLACED:
CIVIC RESPONSE AND REFUGEE COMMUNITY CENTER**

Roslyn Ruslan

**A Thesis Submitted in Partial
Fulfillment of the Requirements
for the Degree of**

Bachelor of Architecture

**Department of Architecture School of Architecture and Design
ASSUMPTION UNIVERSITY**

2016

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A SPACE FOR THE DISPLACED

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A Space for the Displaced is a thesis attempt at further understanding the importance of providing a sense of belonging within the scope of architecture. With the refugee crisis severely affecting many parts of the world, the need to provide assistance architecturally to this group of people is critical and unfortunately, ill-considered.

In contrast to that, due to the displacement of people, there is a lack of understanding and misconception within local community in Kuala Lumpur. Most people fear and discriminate refugees due to their ignorance and lack of knowledge towards their struggles, therefore further segregating the two communities. In order to find a middle ground between the needs of refugees and the sensitive nature of locals, an architectural space that transforms according to the needs of both parties and one that utilizes more vernacular materials and building techniques is needed.

This thesis project hopes to act as a platform for developing mutual understanding between two segregated communities, providing accessible opportunities for the displaced and presenting a semblance of sense of belonging to an unappreciated groups of people.

Acknowledgement

"We will all move forward when we recognize how resilient and striking the women around us are"

-Rupi Kaur, 2010

Thank you; to my birth mother, Mawa Shariff and my mother figure throughout my years in university, Pim Wanaprapa.



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CHAPTER 1: THESIS INTRODUCTION

1.1 Background of Interest

Kuala Lumpur, Malaysia is a multi-cultural city that boasts possibilities of the acceptance an amalgamation and diverse number of races, backgrounds and religions. However, there is a significant segregation between refugees and locals within the urban landscape. With a critical increase of asylum seekers in the city itself, the social and cultural exclusion that is experienced by refugees are blatant and severe.

Currently, the refugee crisis around the world caused by countries at war is said to produce the highest ever displacement of people since World War 2.

In 2015, nearly 1000 people of the Rohingya race tried to flee Myanmar but died in the Andaman Seas. They, collectively known as the "Boat People" to international media, were trying to escape systemic violence and persecution by the Myanmar government.

Neighbouring countries such as Thailand and Malaysia remain resistant to recognize the Rohingya people's rights as refugees and choose to only provide semi-permanent or transitional privileges as a result.



Figure 1.1 Rohingya refugees displaced into the sea on boats

As of today, there are close to 200,000 refugees in Malaysia, ¹over 92% from Myanmar (Karen and Rohingya), and others from countries such as Sri Lanka, Pakistan, Somalia and Syria. Although this is a staggeringly high number, local Malaysians have minimal to no interaction with this community of people. Malaysia is not signatory to the UN Convention on Refugees and Immigrants 1969 rights of movement within the country. This therefore ensures that refugees are unable to find education and receive marginal financial aid from the government, most resort to acquiring money through illegal activities such as stealing and petty theft. This has created a racial and social conflict between refugees and non-refugees. This proposal hopes to unite the people and to eliminate the fear and labels that come with the term “refugee” through architecture.

1.2 Issue of Interest

To achieve social cohesion, this thesis proposes a refugee civic space that is able to weave between permanent and temporary programs and spaces that respond to change and transformation. There is a current need for adaptable and flexible architecture that is able to transform according to the needs and requirements that accommodate incoming refugees, especially with the ever changing international situation. This thesis project hopes to provide permanent programs that encourage inter-communal integration as well as a temporary program that acts and adapts in response to possible momentary issues and crises that relates to asylum seekers and other humanitarian affairs.

Most urban spaces and cities are made up of traditional dwellings that are static and unmovable. This firm form of security allows dwellers to feel sheltered and protected. In contrast, flexible architecture discusses the idea of accommodating change over time.

The term flexibility was coined around the early 1950s by Bauhaus architect, Walter Gropius

Architects have to conceive buildings not as a monument but as a receptacles for the flow of life which they are to serve, and (2), that his conception should be flexible

¹ UNHCR Malaysia: “Figures at a Glance, know your numbers” Last modified Oct 2016. Accessed Nov 2016. https://www.unhcr.org.my/About_Us-@-Figures_At_A_Glance.aspx

enough to create a background fit to absorb the dynamic features of our modern life.

Therefore we can assume social flexibility is in compliance with modernity"²

Yona Friedman, an architect and theorist in the 1950s, recognized adaptability and flexibility as a key concept in architectural design. In his first manifesto, "Mobile Architecture (1958)",³ he proposed a new type of mobility which does not only imply the mobility of the building, but instead for the inhabitants who are given freedom to use spaces according to their personal needs.



Figure 1.2 Yona Friedman "Mobile Architecture" (1958)

A more functional architecture that is movable, adaptable, transformable and capable of disengagement and reassembly could keep up with the ever-changing needs of refugees to have multiple activities in one space, help to maintain economy and also ease over use of energy and resources.

² Heynen, "Coda:Engaging Modernism", in Henket & Heynen, 2002, p.379, with reference to Nikolaus Pevsner, *Pioneers of Modern Design. From William Morris to Walter Gropius*, first published as *Pioneers of the Modern Movement*, 1936.

³ Friedman, Yona "Manifesto de l'Architecture Mobile nr.10 (CIAM X), Dubroniv, 1956

1.3 Objective of Proposal

1. To study the flexibility in architecture such as mobile and kinetic architecture that acts in response and to synthesize with the needs of refugees and current conditions.
2. To provide a space of sanctuary for those who seek permanent or transitional asylum.
3. To further understand the possibilities of providing international social aid and assistance with the use of architecture.
4. To create a space that acts as neutral social catalyst for both locals and refugees to network, volunteer, gather and prepare for new life.
5. To create a meeting space of intercultural exchange between refugees and non-refugees
6. To analyse spaces and architecture that is able to respond and transform according to social human needs of the moment.

1.4 Hypothesis of Proposal

By providing a space that responds effectively to the needs of incoming and existing refugees, a sustainable architectural solution to encourage a positive relationship of the community into the society as well as awareness towards this ongoing humanitarian issue is able to be formed.

1.5 Definition of Terms

Refugee – A person who has been forced to leave the country in order to escape war, persecution or natural disaster.

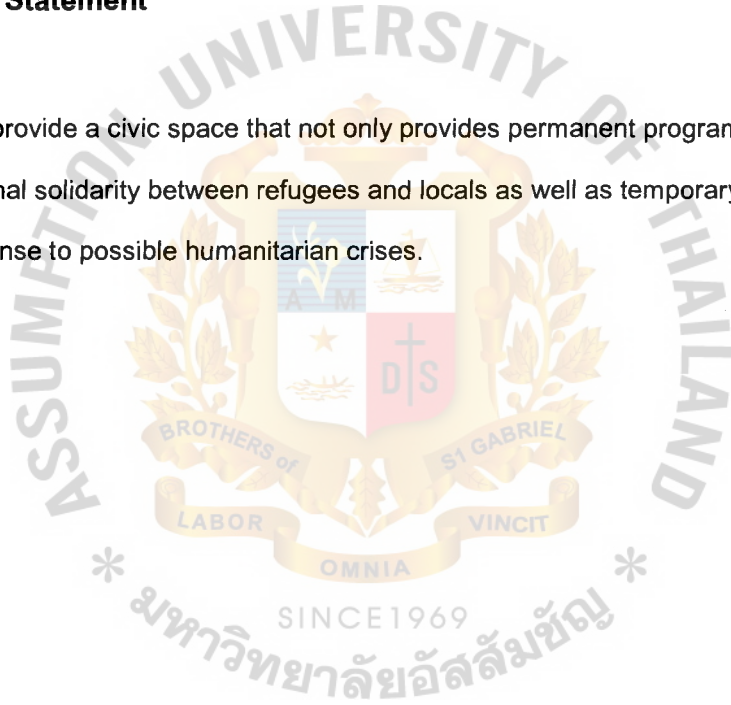
Civic Response – A space that has multipurpose uses that can change and adapt according to the needs or immediate requirements of the users.

Adaptability and Flexibility – The terms describes the ability for architecture to adjust and respond to social change as well as psychological and material needs of the users.

Sense of Belonging – The terms describes how those who are displaced are able to capture and relive the essence of what home, whether psychologically or physically. This is not necessarily a static form of architecture that is permanent.

1.6 Thesis Statement

To provide a civic space that not only provides permanent programs for inter-communal solidarity between refugees and locals as well as temporary programs that act in response to possible humanitarian crises.



CHAPTER 2: LITERATURE REVIEW

To further understand the needs of refugees and the methods of encouraging awareness or interaction between locals and refugees, an in-depth study is necessary. Case studies, anthropological reviews, social studies as well as significant theories act as a frame and guideline to find an architectural solution on how to best serve the needs of the displaced and also, to bring two communities together.

2.1 ROHINGYA, an introduction

The Rohingya people are Muslim Indo-Aryan people indigenously from the Rakhine State of Myanmar. Many anthropologist claim otherwise, by saying that the Rohingya people migrated to Myanmar from Bengal during the British rule in Burma. These Muslim peoples constituted of 5% of the Arakan population (in a social study conducted in 1869).¹⁹¹¹, there was a recorded increase in Rohingyas from 58,255 to 178,647 within the district of Akyab. Due to the uncertain origin of the people, the Myanmar government has refused to recognise them as one of the ethnic groups of the country; therefore rendering them “stateless entities”. For this reason, the Rohingya are seen as refugees within their home country and experience severe hostility as well as discrimination and are often described as the most persecuted people of the world. To escape the harsh and austere conditions of Myanmar, most choose to try to illegally enter nearby South East Asian states, begging for humanitarian support from potential host countries.⁴

⁴ <http://www.theweek.co.uk> “Why refugees are fleeing Burma” Last modified May 2015. Accessed October 2016. <http://www.theweek.co.uk/63745/the-rohingya-boat-crisis-why-refugees-are-fleeing-burma>

2.1.1 The 2015 Refugee Crisis

The 2015 Rohingya refugee crisis describes the mass migration of these minorities from Myanmar and Bangladesh to neighbouring South East Asian countries; such as Thailand, Malaysia and Indonesia. These people are referred to by the media as “boat people” due to the large vessels that carry hundreds to thousands of Rohingya people that waited within international waters for a semblance of hope for safety and belonging.

Malaysia became the beacon of hope for these Muslim refugees due to the national religion; Islam. Those who had the ability to choose, chose to attempt the border crossing on land through Thailand or by sea, directly to Kuala Lumpur (via Port Klang) or Pulau Penang (via Butterworth).

At first, Malaysian government refused to provide any kind of refuge to the people reaching its shore but agreed to “provide provisions and send them away”. With international coercing (especially through UNHCR support), Malaysia and Indonesia agreed to provide temporary settlement to the Rohingya.⁵

2.1.2 The Situation in Malaysia



Figure 2.1.2. Rohingya Refugee conditions in Malaysia

⁵Beh Li Yi, “Go Back To Your Country” May 2015

<https://www.theguardian.com/world/2015/may/13/malaysia-tells-thousands-of-rohingya-refugees-to-go-back-to-your-country>

As of February 2016, 158,510 refugees and asylum seekers were registered with UNHCR in Malaysia.⁶ As many congregate to the urban city of Kuala Lumpur and the surrounding Klang Valley, As Malaysia is not signatory to the UN's 1957 Refugee Protocol, refugees are not provided with a legal, policy or administrative framework and the Malaysian government does not provide direct protection or assistance to refugees on its territory, and efforts to promote a refugee law and policy remains ongoing.

A 2012 report evaluating the implementation of UNHCR's urban refugee policy in Malaysia (Crisp et al, 2012:1) states the context for refugees:

Malaysia can be considered as a "country of asylum" only in a loose sense of that concept... While they are generally not at risk of refoulement or deportation, refugees in Malaysia have been and continue to be at risk of arrest, detention, extortion and corporal punishment, although the frequency of such incidents has diminished in recent times. Official restrictions prevent refugees from working in the formal sector of the economy, accessing healthcare on the same basis as nationals and attending Malaysian schools.⁷

With such knowledge, refugees who live within Malaysia are not able to earn a living, receive any form of health assistance or provide education for their children as well as vocational language or life skill education for adults.

2.2 Spatial transformation and social change

Architecture, like no other form of cultural production can manifest renewed cultural agency by making it spatial, material, present and undeniable⁸. As architects, many have ventured out of the comforts of aesthetic design and into the mind set of feeding the needs of the people according to the current conditions of society. Alejandro Aravena⁹, winner of Pritzker Architecture Prize 2016, stands with ideas of how to ease cultural problems through architecture. His main philosophy spans between synthesizing simplistic designs that focuses

⁶ UNHCR Malaysia, 2013b

⁷ Amnesty International Malaysia (2010); ERT (2014); Smith (2012)

⁸ L. Findley, Building Change: Architecture, Politics and Cultural Agency, 2015

⁹ TedTalks, Alejandro Aravena 2016

on urbanization through 3 S study: scale, speed and scarcity of needs. The urbanization in Chile has caused an incredible increase of illegal slum dwellers. Aravena found a solution for social housing by including families (participatory design) into the innovative design process. The study of spatial needs of 80sqm for a moderate size family allowed Aravena to come up with the half house theory, whereby 40sqm was designed



Figure 2.1 Half-house theories, Elemental Architects

to accommodate the basic needs (kitchen, toilets, bedroom) and the other 40sqm is an empty space can be adjusted and designed by those who use the space, according to their needs.

The power to act on behalf of someone else or on one's own behalf is a prerogative on certain ideas of freedom. The idea of half houses, does not encroach upon the comfort levels of the users, but instead provides an open ended template and frame for those who need shelter. This not only allows for the dwellers to participate in their own lifestyle changes, but also educates them with possibilities and allows fewer restrictions.

While social change is not limited towards those who are stricken with poverty, it also includes those who experience disaster and trauma. This includes those who are seeking asylum, recovering from natural disaster and so on. Shigeru Ban has been hailed as a social architect that specializes in disaster relief projects. His resourcefulness plays a vital role in the practice by finding structural uses for fugitive materials, including paper and cardboard. His

project “Cardboard Cathedral” gave the community of Christchurch, New Zealand a symbol of strength and hope following the 2011 earthquake.



Figure 2.2 Cardboard Cathedral, Christchurch, Shigeru Ban

This cathedral has the capacity of 700 people and is permanently used as a religious space and an event area. The 96 paper tubes are reinforced with laminated wood beams and are coated with waterproof polyurethane and flame retardants with two-inch gaps between them so that the light can filter inside. The choice of structure and materials was in regards to making it sustainable as well as earthquake resistance as Christchurch has underwent several severe earthquakes within the last few years.

Both Alejandro Aravena and Shigeru Ban have received Pritzker Architecture Prizes due to their innovative design strategies that follow the needs of users intimately and are consciously aware of the possibility of social change and the need for adaptable design. Their strategies play with participatory design and flexible spaces to correlate with the existing and potential problems of the current world situation.

2.3 Sense of Belonging

Having a sense of belonging to a certain place is vital for everyone adapting to a new environment, more so to those displaced. The identity of refugees and asylum seekers are usually not a main concern when considering their needs, especially for transitory programs.

While welcomed, refugees are usually only provided with basic necessities, such as shelter, food, medication and clothes. Psychological trauma relief is regarded as an added luxury as it exceeds essential humanitarian needs.

The Rohingya race has been stateless since the 1950s. In Rakhine state, Myanmar, although many have lived the entirety of their lives there, over 145,000¹⁰ men, women and children are confined to 65 squalid internment camps. More than 1 million Rohingya people are denied freedom of movement and equal access to citizenship rights.



Figure 2.3.1. Discrimination against the people of Rohingya by Burmese

As of the most recent study, currently around 170,000 Rohingya people have fled to Malaysia since the 1970s. While Malaysian authorities allow for transitory stay (with hopes of third country repatriation), Malaysia is not signatory to the 1951 Convention or its 1967 Protocol which promises rights to asylum; physical protection (refoulement) access to court (detention), right to earn a livelihood and freedom of movement. The number of Rohingya refugees continues to rise especially within the urban areas of Kuala Lumpur even with this knowledge, due to the several factors: 1. Ease of border crossing, as Malaysia lacks strong border control laws, 2. Personal connections to other refugees that have already established a home in Malaysia, 3. Religious similarities, Malaysia being a Muslim country resonates strongly within the Rohingya community.

Many Rohingyas praise God as being the sole reason to their survival and ability to flee Myanmar. They come from a religious background whereby Allah s.w.t is the creator and

¹⁰ Fortify Rights and Burmese Rohingya Organization, "Everywhere is Trouble" UNHCR Publishing, March 2016

He has the power to decide one's fate. Their sense of belonging stems for their love for God and his teachings. The context of Kuala Lumpur serves as an ideal landscape that can potentially provide the essence of home as the religious similarities can further strengthen their comfort and acceptance within the society.

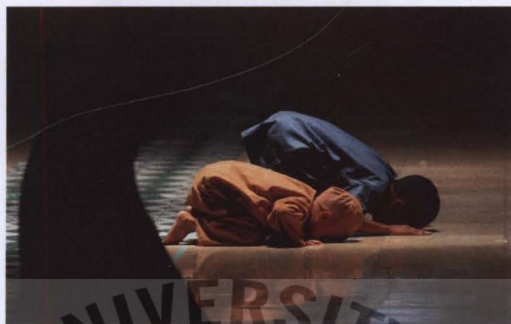


Figure 2.3.2. Sense of Belonging; religion

2.4. Segregation of Communities

Currently, even though refugees have been part of the urban Kuala Lumpur society since 1970s, many still live in fear and are not able to openly congregate with locals. As refugees live quietly within slum districts with illegal immigrants, most are significantly segregated and not able to meet locals and communicate with them on an equal platform.

2.5. Interviews

Yante Ismail, Associate of External Relations officer of United Nations High Commissioner for Refugees (UNHCR), Malaysia shared her experience handling the internal affairs regarding the wellbeing of refugees in the urban context of Kuala Lumpur. She mentioned the difficulty experienced by said refugees due to the inability for them to work legally and not receiving any form of identification.



Figure 2.4 Ms. Yante Ismail, Associate of External Relations Officer of UNHCR Malaysia

Ismail was informative with information about the current condition of urban refugees who are unable to receive any form of social housing or refugee camps (which is rendered illegal in Malaysia). This leads to an accumulation of refugees staying within the slums of central Kuala Lumpur with other illegal immigrants. She also mentioned the discrimination and prejudice faced by this group of people from authorities and government bodies. Many are caught due to their lack of identification and expected to pay some form of bribe to be released. Refugees are mistreated and victimized and are expected to fight for their welfare and safety with no form of financial or legal assistance.

Lastly, Ismail ended the interview with suggestions on promoting interaction between locals and refugees by providing open spaces that involve both communities. Social tension may occur if the refugee community is given support when the working class locals are unable to receive the same. The sensitive relationship between both communities must be taken into consideration. The issue of refugees may incite negative response from existing local communities.

CHAPTER 3: CONTEXTUAL PROPOSITION

Kuala Lumpur is the capital city of Malaysia and acts as the urban convergence of a multitude of races and culture. 70% of refugees make their way to Kuala Lumpur, with hope of finding a sense of belonging within one of Asia’s largest metropolitan centres

3.1 District selection



Figure 3.1 Central districts, land use and refugee zoning

3.1.1 Urban context for refugees and existing communities

As most refugees congregate within the boundaries of Kuala Lumpur’s central districts, a focus is put towards districts that surround the main Kuala Lumpur City center, also known as Petronas Twin Towers.



Figure 3.1.1 View of Petronas Twin Towers (KLCC) and its surrounding

3.2 Site selection

To decide on a specific site to use for a sensitive project that pertains issues regarding refugees/immigrants and locals, several criteria must be considered.



Figure 3.2. Criteria for site selection

Each criterion focuses on enhancing refugee and local interaction as well as providing the necessary facilities that will develop standard of living of refugees within Kuala Lumpur areas. As refugees also have limited means of transportation, the site must be within walking distance of public transportation while providing adequate safety.

The site also must provide the ability to have urban farming plots to nurture their agriculture skills. A need for a playground that caters for refugees and locals will stimulate

communication between the children of both communities; therefore the site must be able to provide safety.

Site A



Figure 3.2.1 SITE A: Central Business District

Site A was chosen is an abandoned land in the centre of Kuala Lumpur's busiest area with surrounding immigrant communities.

Site B

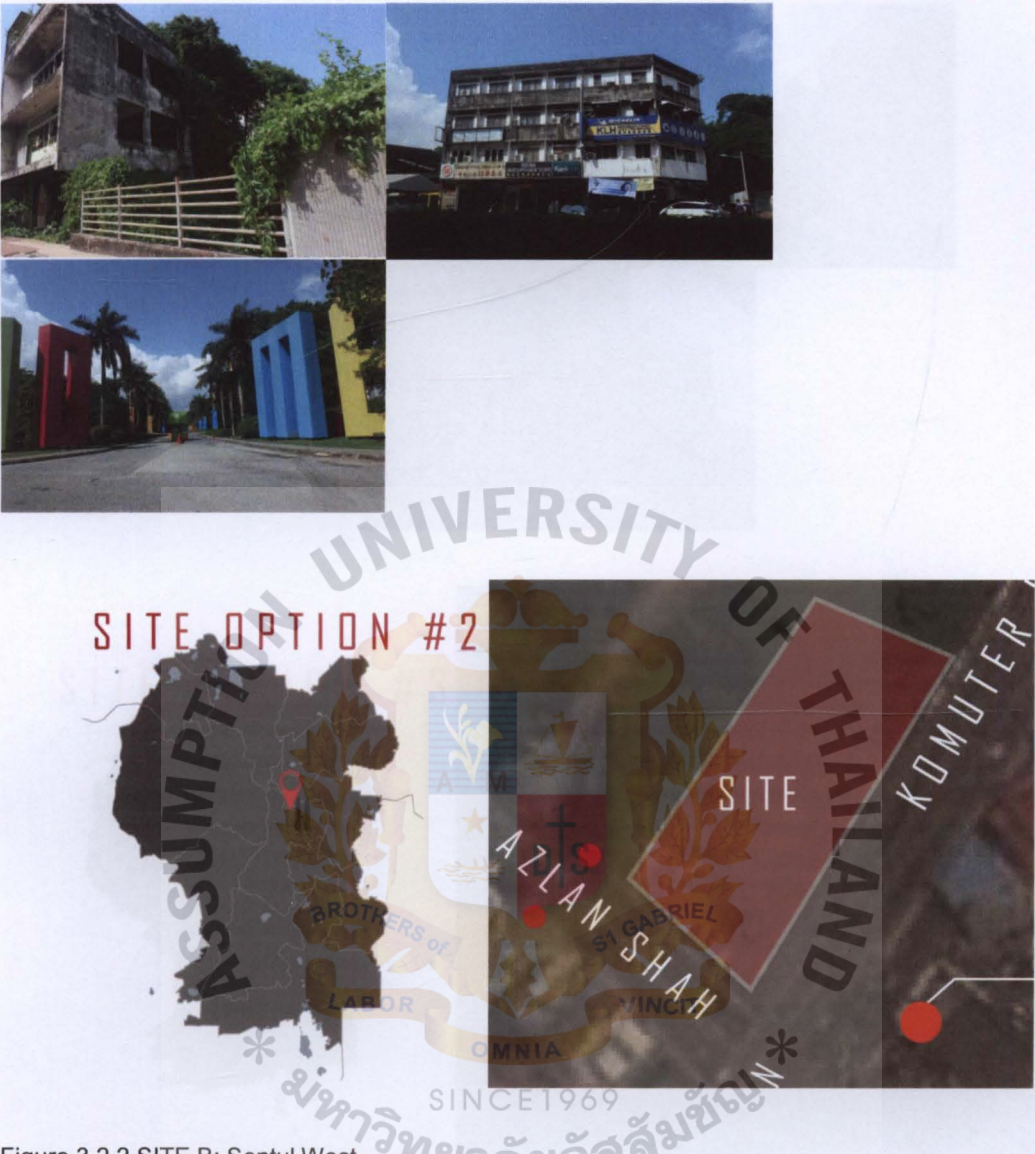


Figure 3.2.2 SITE B: Sentul West

Site B is located within an area that consists of middle to working class communities as well as a small refugee community. The site itself currently has abandoned shop houses that were built in the 1950s-1970s.

Site C Comparison

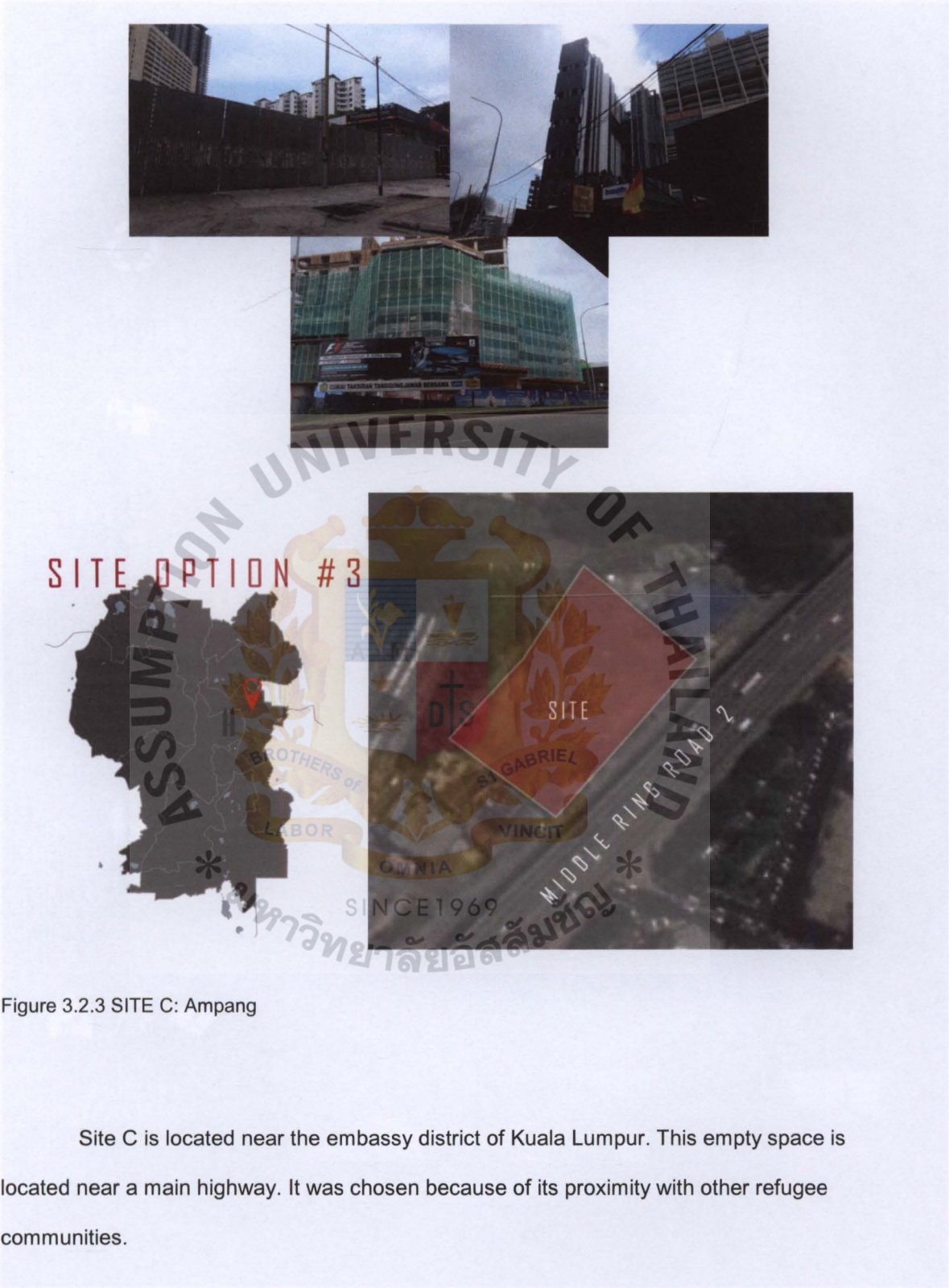


Figure 3.2.3 SITE C: Ampang

Site C is located near the embassy district of Kuala Lumpur. This empty space is located near a main highway. It was chosen because of its proximity with other refugee communities.

Figure 3.3 Site Comparison between 3 sites proposed

3.3 Site Comparison

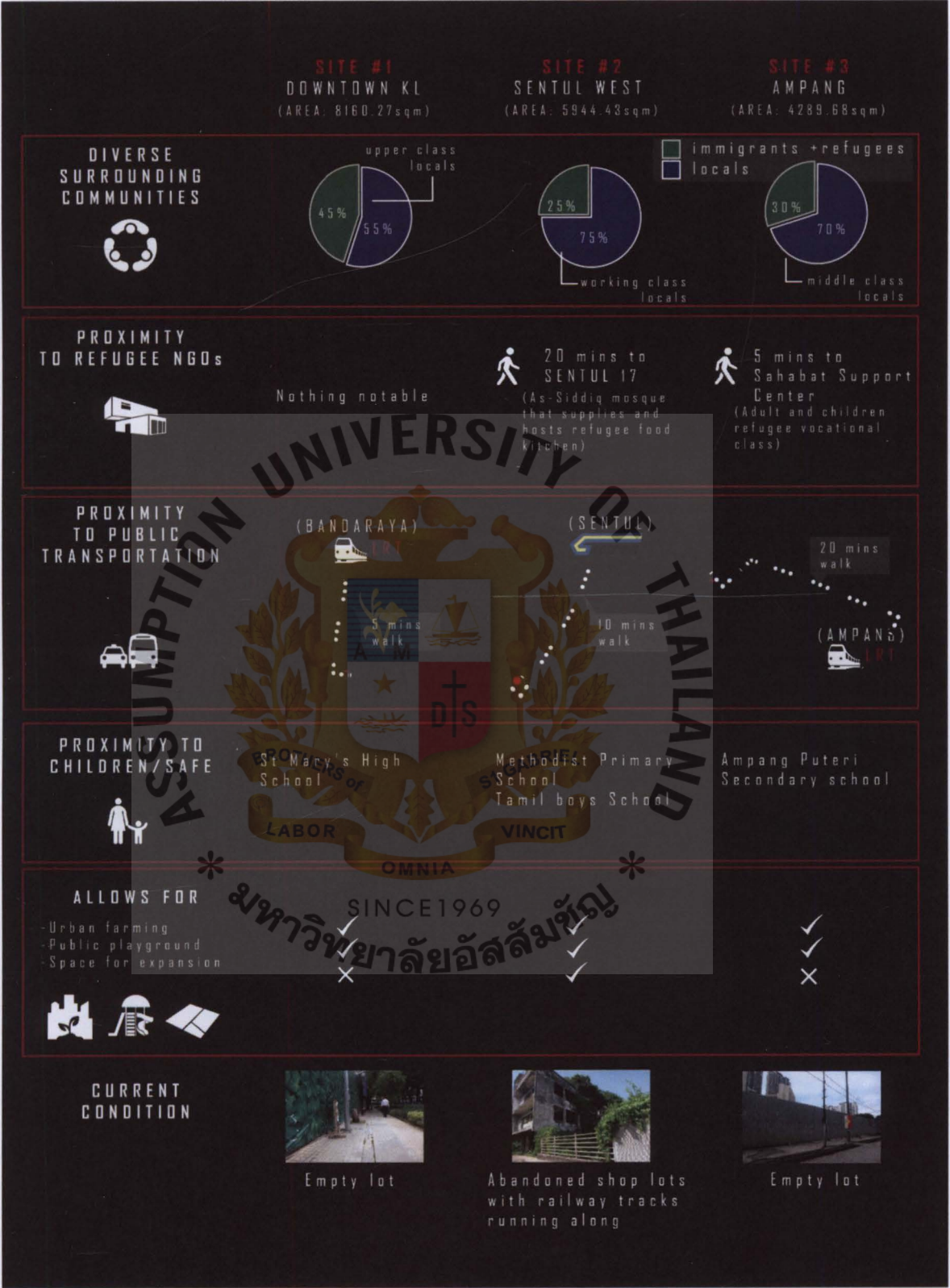


Figure 3.3 Site Comparison between 3 site choices

The site comparison analysis shown in the previous figure shows observation and personal research on the Site A, B and C. All three sites were narrowed down with deliberation towards its location, surroundings and social factors. Based on the criteria's provided, each site is weighed and evaluated to see its appropriateness.

3.4 Site Analysis

Based on the comparison analysis, the most appropriate site is Site B. The site is located in the Sentul West, an old charming district that is slowly gentrifying with the new land takeover by the YTL Corporation, with the building of new high rise condominiums and KL Performing Arts Centre.



Figure 3.4.1 Relationship between Sentul, Port Klang and The Rakhine State

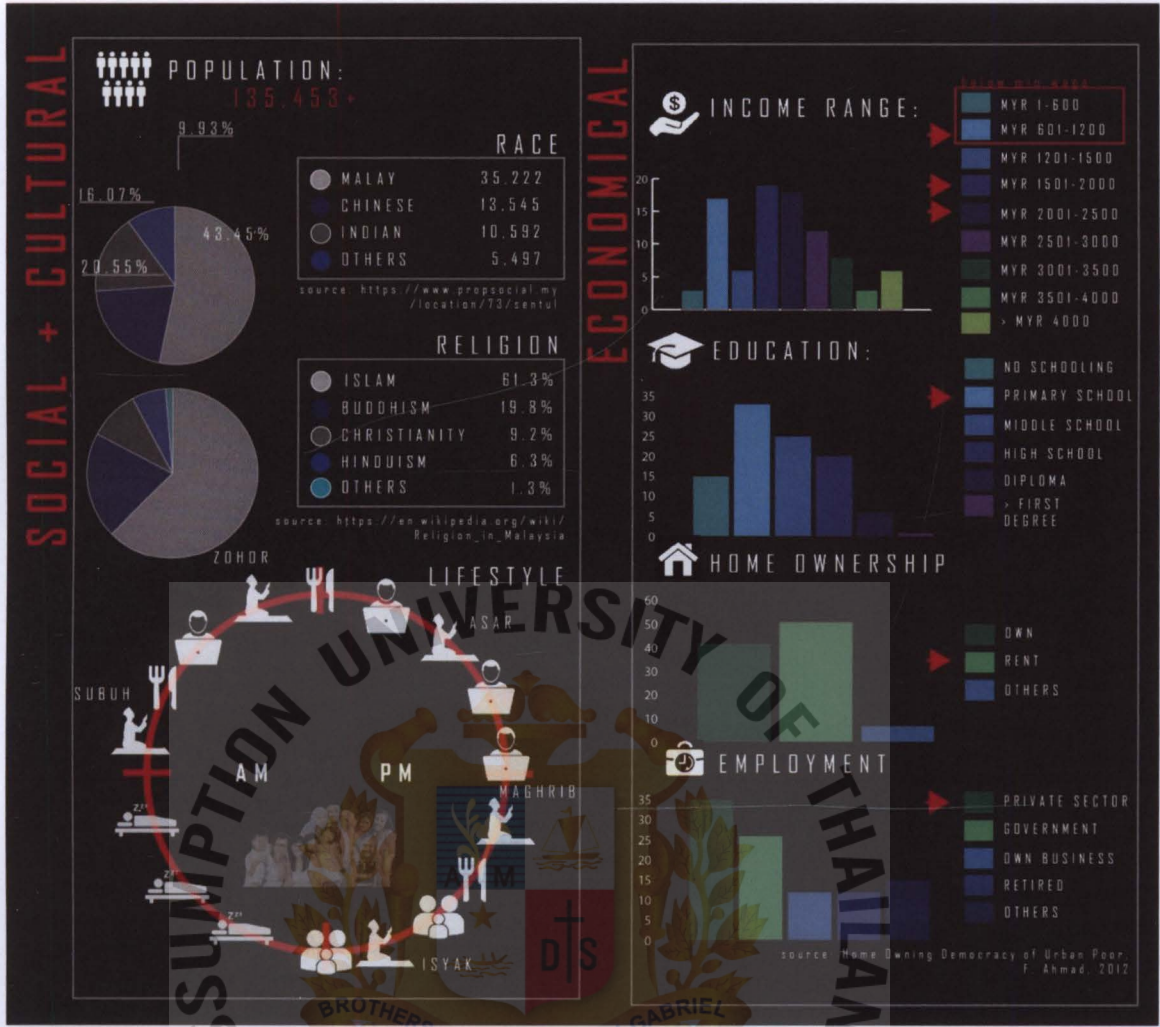


Figure 3.4.3 Social, cultural and economic study of site

The population of Sentul consists of 135,453 people¹¹ with a majority of 43.45% Malay, 20.55% Chinese and 16.07% Indians. Through deeper study and analysis, it is discovered that the area of Sentul consists of a working to middle class individuals with some even earning below minimum wage. Most adults only have a primary school education while only renting their houses.

Due to Islam being the majority of religion practiced, it is safe to assume that praying is a common practice within their daily life.

¹¹Faiza, Ahmad, "Home Owning Democracy of Urban Poor "Written March 2012. <http://www.ccsenet.org/journal/index.php/jsd/article/view/12672/9538>

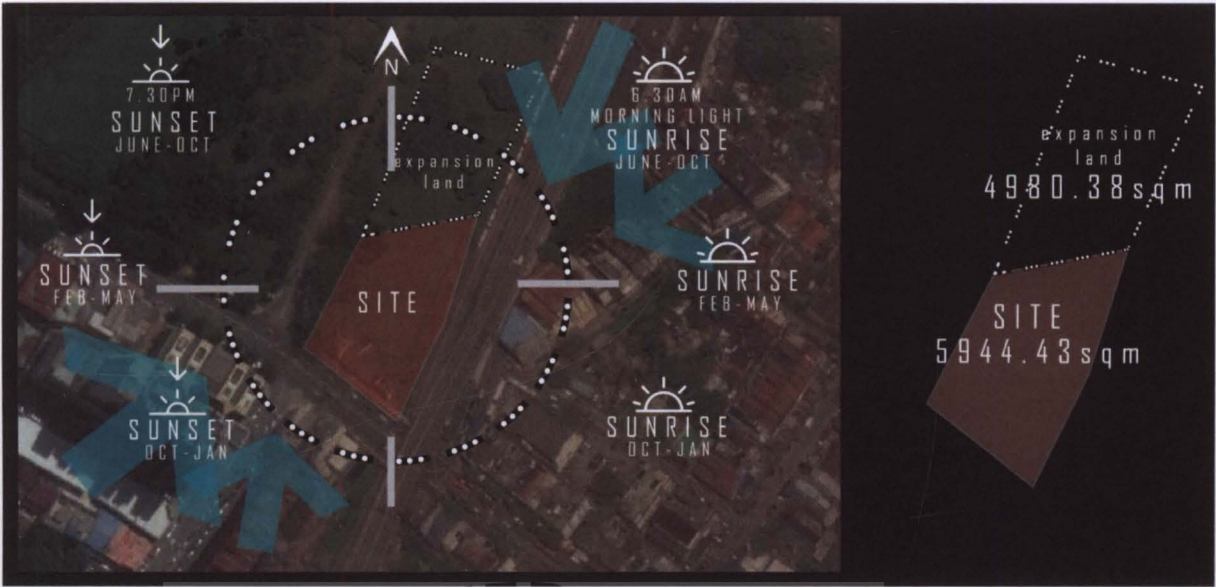


Figure 3.4.4 Site area, sun path and wind direction



Figure 3.4.5. Deeper site analysis

Figure 3.5.2 Location of site

3.5 Law and Regulations



Figure 3.5.1. Plot and Open Space Ratio of Site



Figure 3.5.2. Law and Regulations of site

CHAPTER 4: POTENTIAL DESIGN RESPONSES

4.1 Design scope

To provide architectural spaces that allows for interaction between locals and refugees and also provides appropriate facilities for refugees.

4.2 Programming Analysis



Figure 4.2 Program Analysis

4.3 Organizational Structure

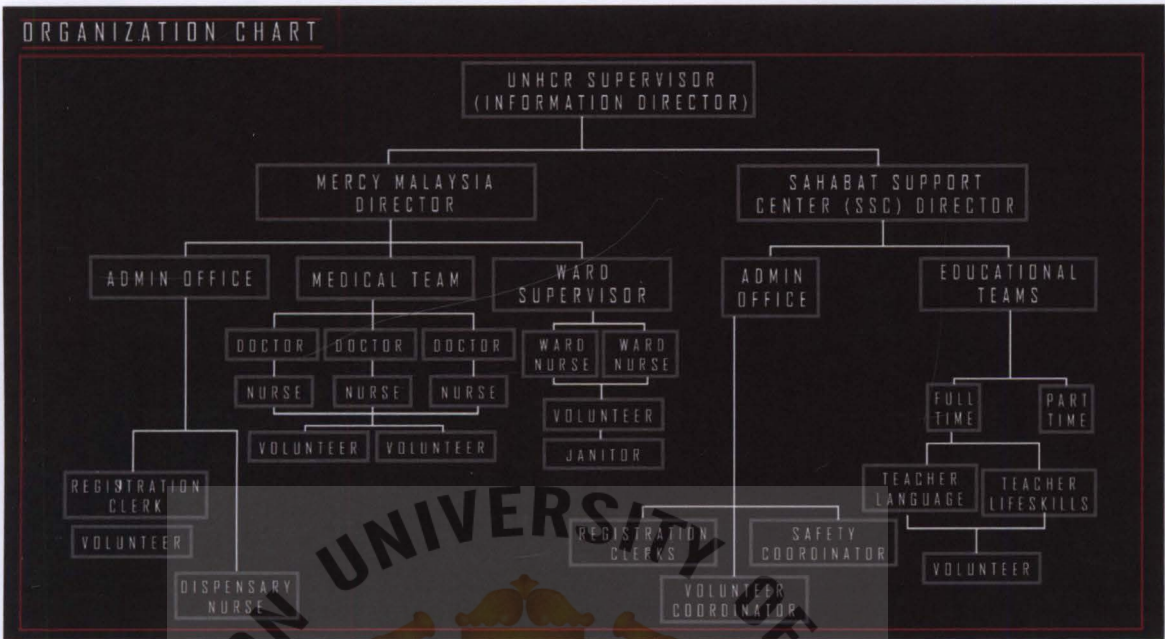


Figure 4.3. Organization structure of refugee facilities

4.4 Activities and Spaces

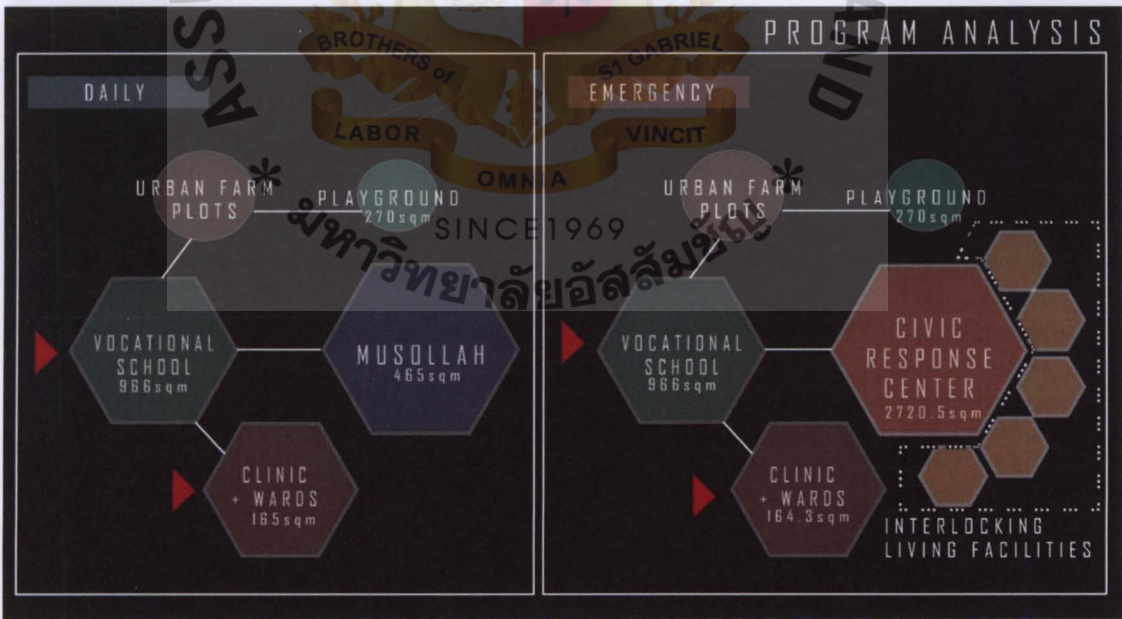


Figure 4.4. Program analysis between daily and emergency spaces

4.5 Space Summary

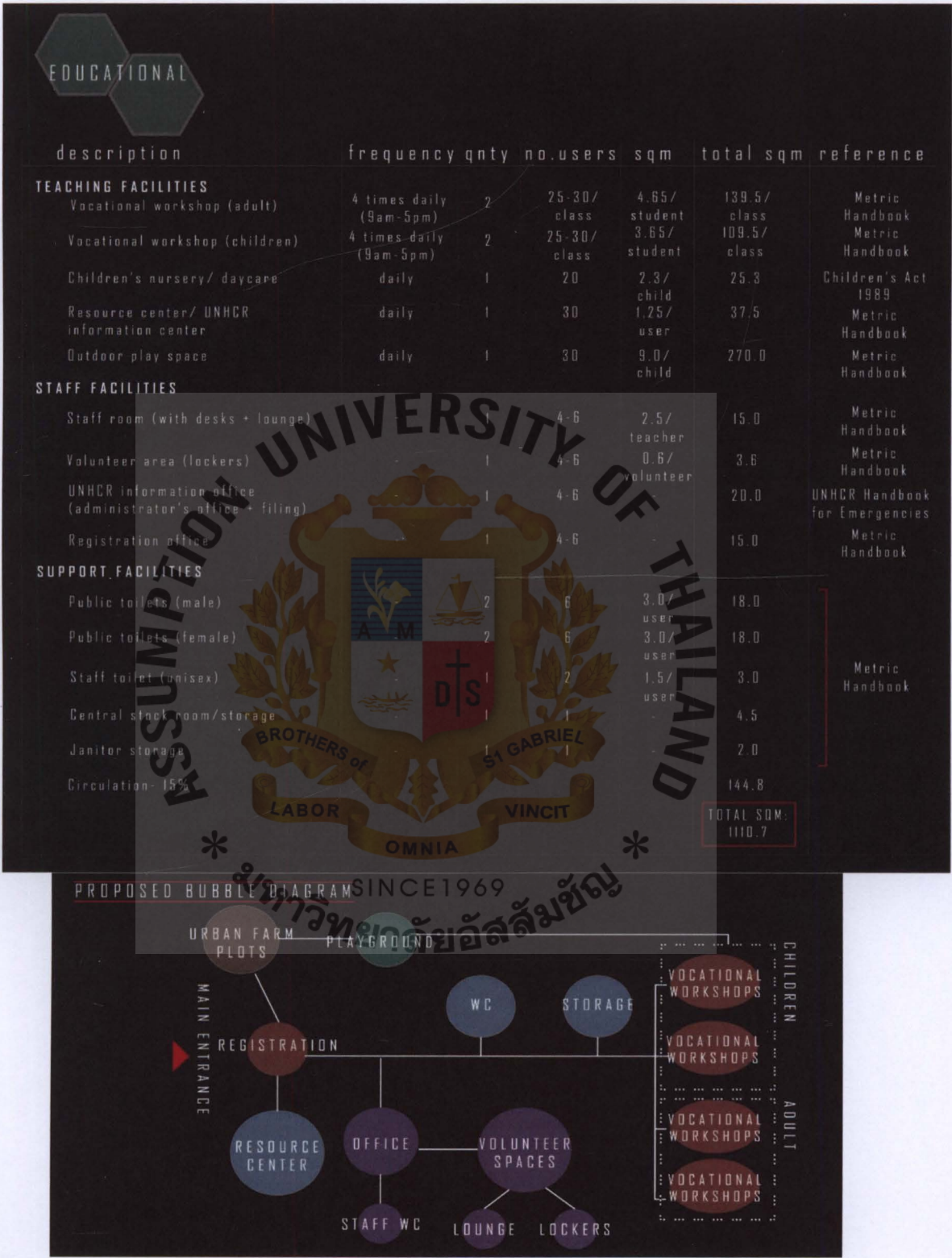


Figure 4.5.1 Space summary and bubble diagram of educational zone

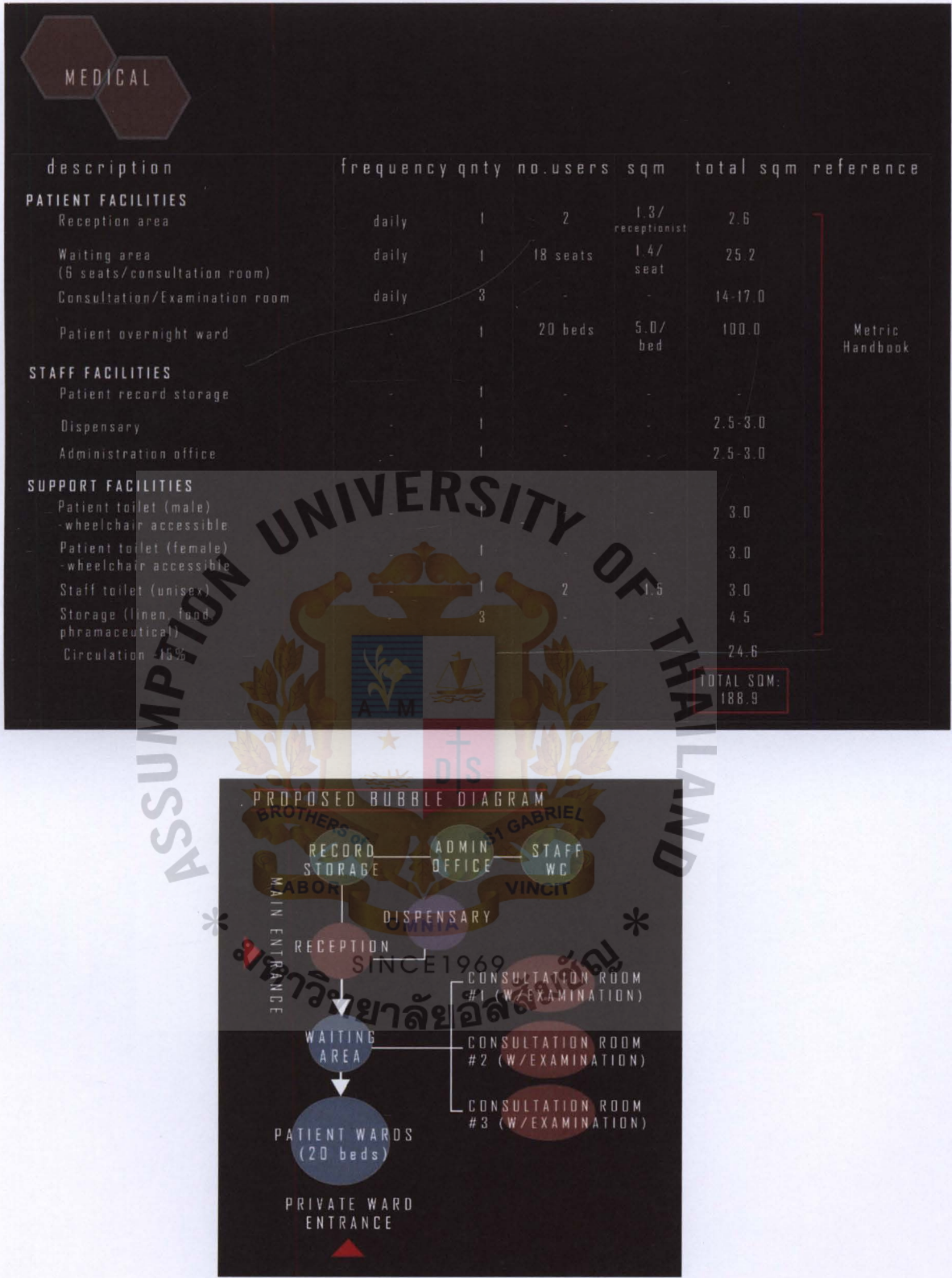


Figure 4.5.2 Space summary and bubble diagram of medical zone

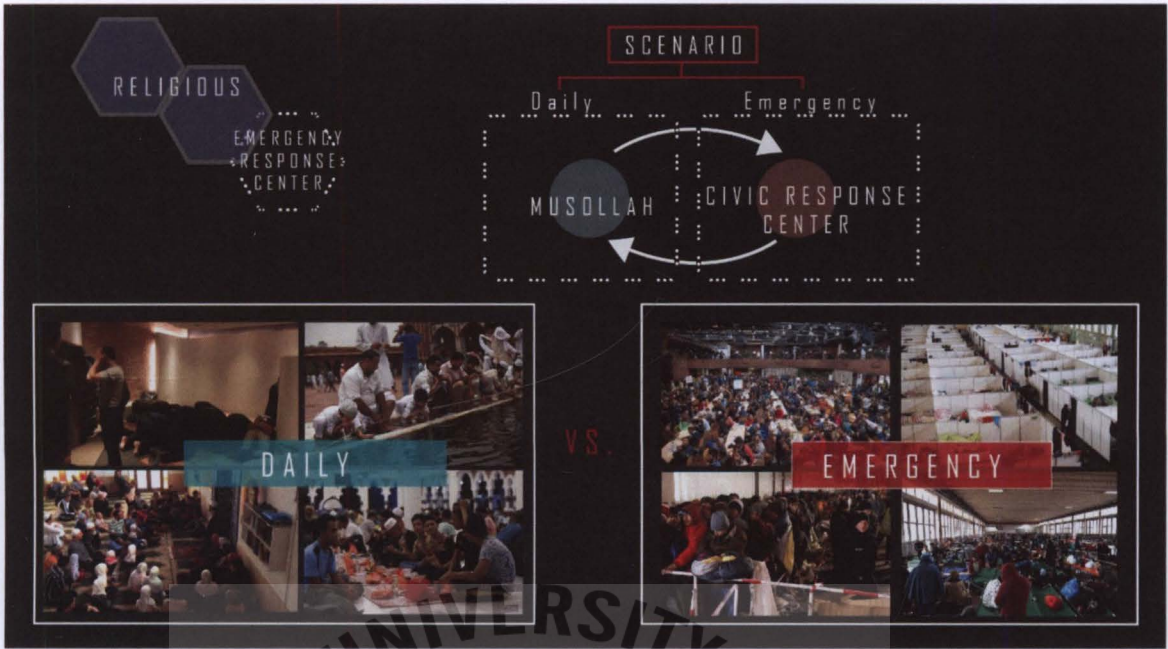


Figure 4.5.3 Relationship between religious facility and emergency response

Figure 4.5.4 Space summary of religious facility (daily and emergency)

The above space summary details the total space that will be required for the facility. The total space required for the facility is 1,000 sqm. The total space required for the facility is 1,000 sqm. The total space required for the facility is 1,000 sqm.

DAILY		frequency	qnty	no.users	sqm	total sqm	reference
description							
PRAYING FACILITIES							
Pre-function space (semi outdoor)			1	200	0.15	30.0	Metric Handbook
Praying hall (men)		5 times a day during prayer times	1	100	0.75/ prayer	75.0	
Praying hall (women)			1	100	0.75/ prayer	75.0	
Ablution area (men)			1	10	0.5	50.0	
1 unit per 10 users							
Ablution area (women)			1	10	0.5	50.0	The American University of Sharjah, UAE
1 unit per 10 users							
Library/resource area			1	-	-	30.0	
PRIVATE FACILITIES							
Imam office			1	1	-	10.0	Metric Handbook
Kitchen facilities			1	-	-	25.0	
SUPPORT FACILITIES							
Public toilets (male)			2	20	3.0/ user	60.0	Metric Handbook
Public toilets (female)			2	20	3.0/ user	60.0	
Circulation- 20%						93.0	TOTAL SQM: 558.0
EMERGENCY							
description		frequency	qnty	no.users	sqm	total sqm	reference
REGISTRATION FACILITIES							
Arrival zone			1	-	0.15	30.0	UNHCR Handbook of Emergencies
Medical clearance area			1	-	-	75.0	
LIVING FACILITIES							
Sleeping spaces			1	570	3.5	1995.0	UNHCR Handbook of Emergencies
Latrine + showers			1	28.5	3.0	85.5	
Kitchen prep						100.0	
100sqm per 800 people							
Storage						150.0	
150sqm per 500 people							
Clothes washing area						285.0	
Green space				570	0.5	285.0	
Circulation- 15%						408.0	TOTAL SQM: 2678.5

Figure 4.5.4 Space summary of religious facility (daily and emergency)

The above space summary details the exact square meter total requirements that is suggested, from the UNHCR Handbook for Emergencies and the Metric Handbook. The total area required directly correlates with the frequency and estimated number of daily users.

CHAPTER 5: BUILDING TECHNOLOGY

This chapter explores the possible structural, material and system applications that will suit this project, according to its scale and identity. To begin narrowing down suitable applications, a criteria matrix is made to further understand which would suit the project best.

CRITERIA	MATERIAL	STRUCTURE	SYSTEM
	Easily accessible	Easily assembled/ dismantled	Energy saving
	Economical		Cost saving
	Excess availability	Flexible/movable	Mitigates rain + sun intensity
	Lightweight	Modular	
	Easy to transport	Interlockable	

Figure 5.1.1. Criteria matrix for building technology

5.1 Building Materials

To strengthen the projects contextual relationship, the need for materials that are easily accessible, economical, excessive availability, lightweight and easy to transport is required.

Figure 5.1.2. Building materials

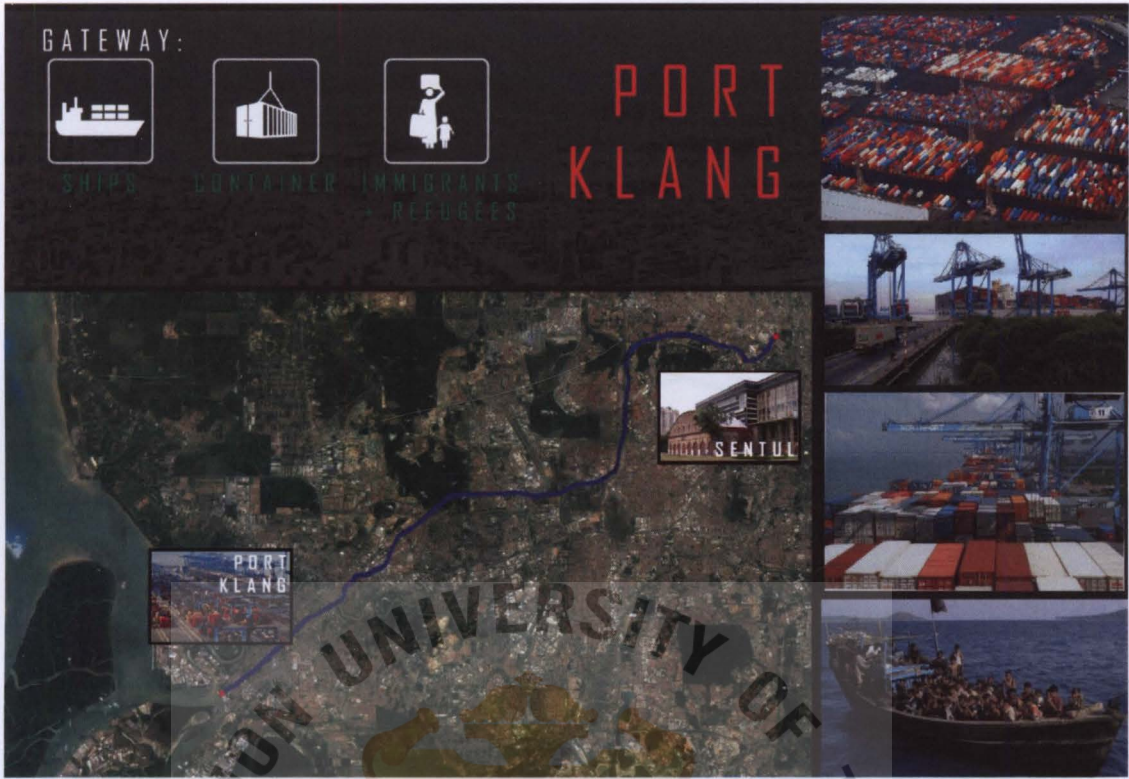


Figure 5.1.2 Linkage of Sentul with Port Klang

Based on this criterion, a linkage to Kuala Lumpur's closest port destination, Port Klang is conceived. As refugees enter to the urban context through the same port, an excess of containers can be found.

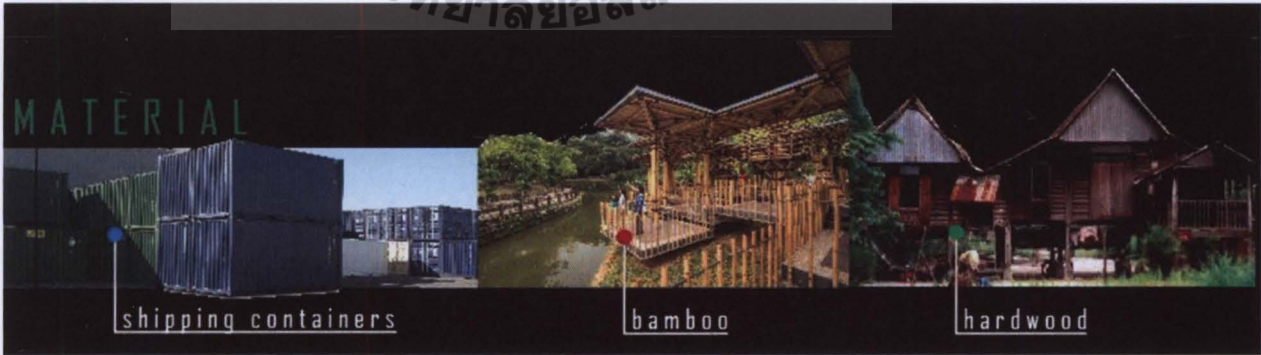


Figure 5.1.3. Building materials

Therefore, shipping containers can be seen to fit the criteria of being easily accessible and transportable, as well as excess availability. Due to its modularity, it is stackable and can be used to temporarily house refugees at a momentary crisis.

Secondly, bamboo, being native to South East Asia, is a material that can be applied well into the project as it is contextually appropriate as well as economical and easily accessible.



Figure 5.1.3 Hardwood in traditional Malaysian houses

Lastly, hardwood is highly representative in traditional Malaysian low cost houses. As this project attempts to bring vernacular architecture that relates to traditional styles, the use of hardwood would be most appropriate in the climate and cultures.

5.2 Building Structure

The building structure required for this project must be easily assembled and dismantled, flexible, modular and interlock-able. By applying such criteria, the project will be able to maximize performance and ability to suit the needs of this project.

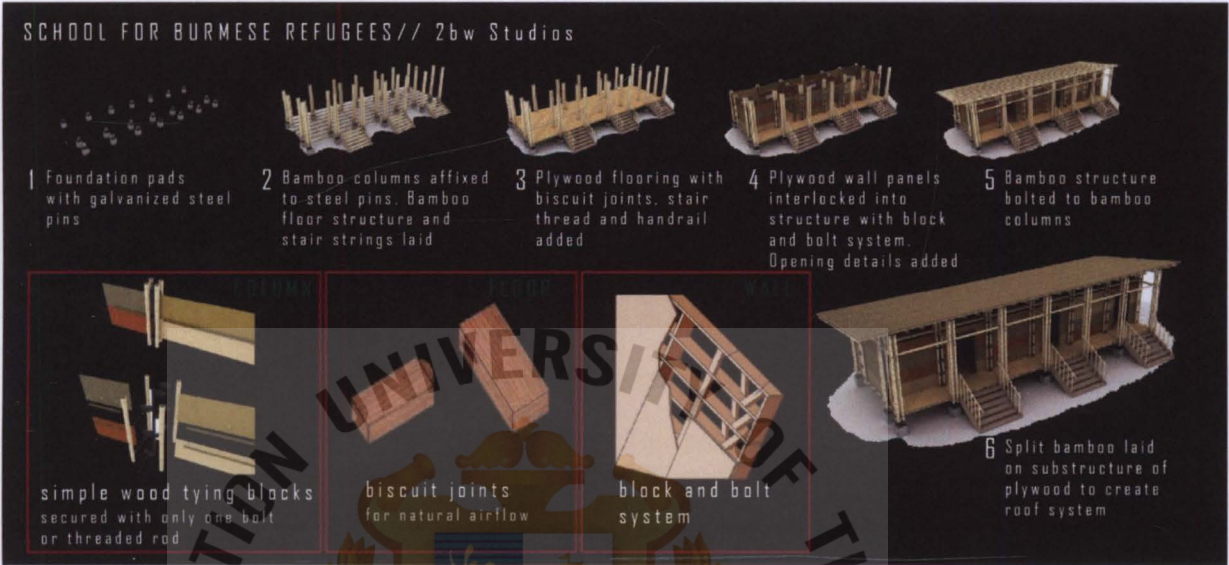


Figure 5.2.1. Case study: School of Burmese Refugees, 2bw Studios

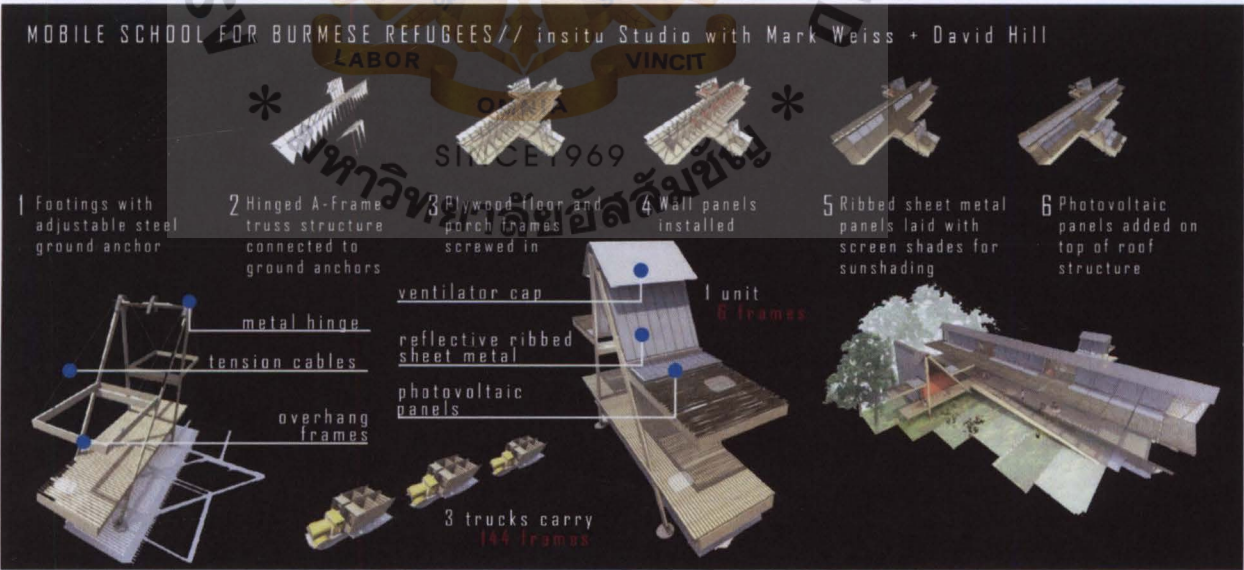


Figure 5.2.2. Case study: Mobile School for Burmese Refugees// insitu Studio

Shown above are two case studies that are designed for Burmese refugees in Northern Thailand. Both case studies reflect the refugee's unassuming condition of being temporary and as a replacement for refugee camps.

In 2bw Studio's School for Burmese Refugees allows for assembly in 6 steps to allow refugees to build their shelter by themselves without any difficulty. Simple wood tying blocks allow for easy structural assembly onto the galvanized foundation pads that have already been situated onto the site. Biscuit joints and block and bolt floor systems are used to ensure spaces are flexible and can be moved according to its needs.

For The Mobile School for Burmese Refugees by Insitu Studio, similar structures of being easily assembled and dismantled are applied. This project utilizes recycled sheet metals that are reflective to ensure cooler spaces within the living facilities. The non-traditional form of each unit saves space and also mitigates sunlight and allows for maximized wind flow.

5.3 Building Systems

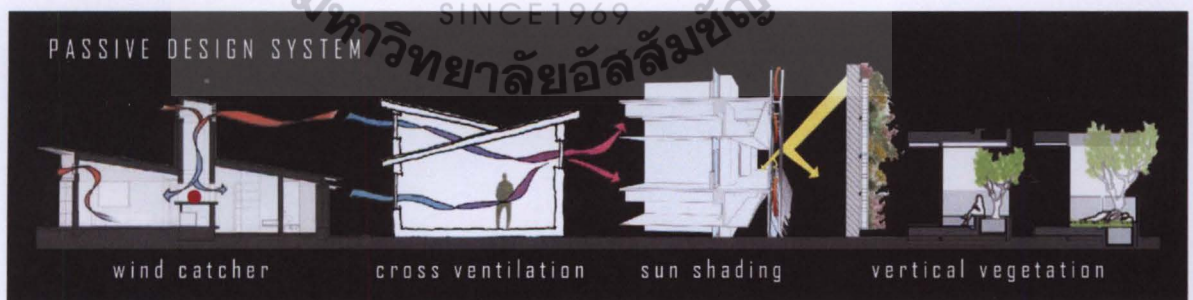


Figure 5.3. Building Systems

As this project must apply more vernacular methods of passive building systems to ensure that it is cost saving, energy saving and is able to mitigate sunlight and maximize wind

flow. Several options of building systems can be applied into this project such as; wind catcher, cross ventilation, sun shading and vertical vegetation.

A wind catcher is a traditional architectural element that creates natural ventilation within the building. It can function in three ways; directing airflow downward using direct wind entry, directing airflow upwards by using a wind-assisted temperature gradient and directed airflow upwards using a solar assisted temperature gradient.

Sun shading allows for mitigation and reduces heat gain within the building by deflecting direct sunlight.



CHAPTER 6: DESIGN SCHEMATICS

6.1. Concept Development

In response to all research findings that have been collected, a concept is developed to best reflect the needs of incoming and existing refugees.

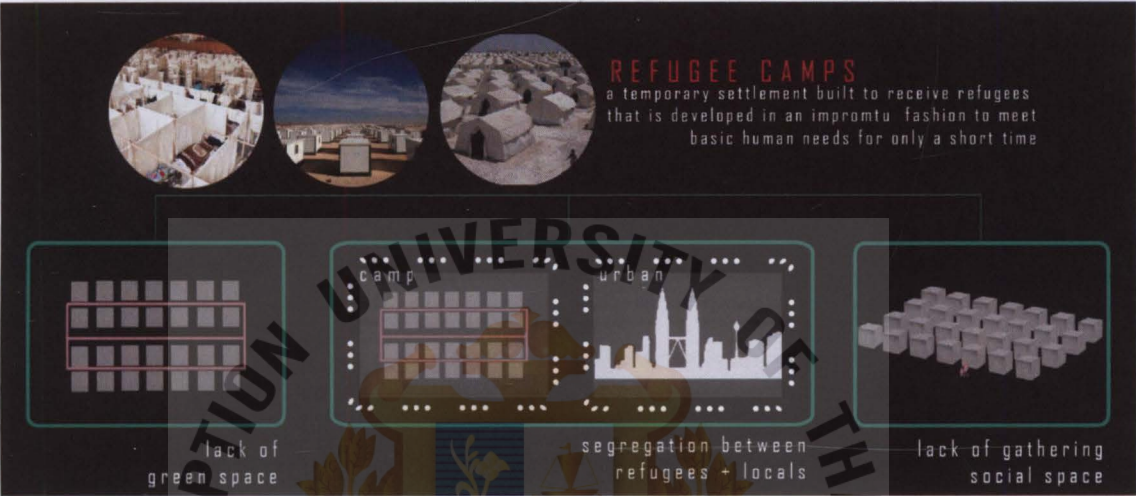


Figure 6.1.1. The problem with refugee camps

Based on the problems that occur within the fabric of refugee camps, three stand out the most; the lack of green spaces, segregation between refugees and locals and the lack of social spaces within the camp itself. These problems become the spine to further the research developments. A concept that establishes a bond between the two different cultures is used architecturally to bring forward the ideal of mutual benefiting both sides, therefore creating a COLLABORATIVE relationship.

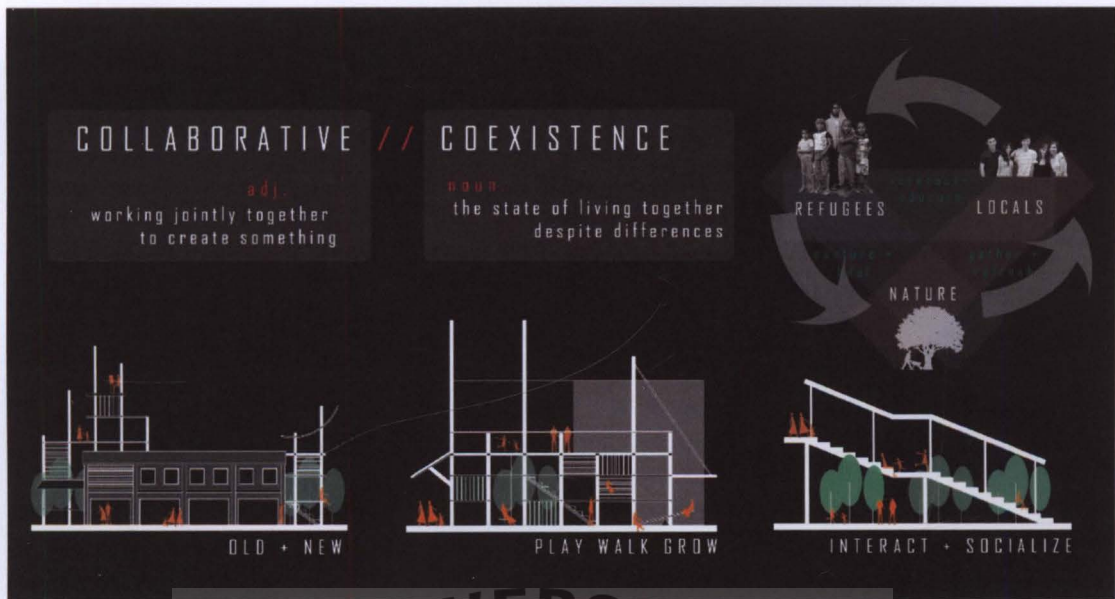


Figure 6.1.2. Concept Development

As segregation between locals and refugees is the issue of interest that has been determined throughout the research, the proposal must be able to support both permanent and temporary programs that best suit the needs of the two users. This project acts as a platform for intercommunication between locals and refugees while respecting cultures and sensitivities.

As a result, a concept that considers mutual understanding and ability to interact gradually is established. The idea of a “**COLLABORATIVE COEXISTENCE**” gives the opportunity for refugees to permeate within the urban society established by locals without causing any form of inconvenience and difficulty to locals. The word “collaborative” on its own gives the meaning of working jointly to create something, whereas the word “coexistence” means the state of living together harmoniously. This concept also allows for refugees to mingle and coalesce with locals on an equal platform while also furthering a relationship that extends past just merely existing within the same surroundings.

The idea of **COLLABORATIVE COEXISTENCE** can be seen in the relationship the project has with its existing shophouse on site with new proposed buildings. The new built up area should “collaborate” well with the existing shophouse rather than diminishing its importance. Most projects would choose to demolish an abandoned shophouse that proposes

no value due to its condition, but as this project is promoting coexistence, this must be implemented in every sense. The collaboration of old building and new built up area promotes this concept further.

This concept also proposes the implementation of the idea of “PLAY WALK GROW”. As the project proposes an outdoor playground area, the space will have multi-functions that not only serve the activities of children, but also act as higher ground walkways as well as vertical growing planters for vegetation and urban farming. The concept of multi-functionality works hand-in-hand with the idea of COLLABORATIVE COEXISTENCE.

Lastly, the outdoor and indoor spaces can display the concept through its ability to allow for socialization and flexibility vertically and horizontally. Each stair area would act as a gathering space as well as sitting areas rather than just a means for vertical movement. Each closed indoor space should also be able to be opened up or enlarged to fit needs and possibilities of users.

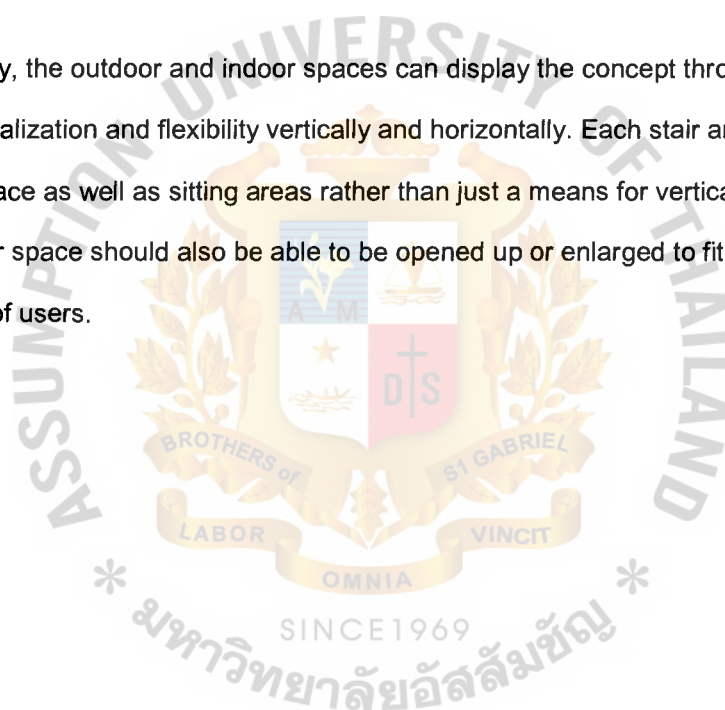




Figure 6.1.3. COLLABORATIVE COEXISTENCE; user interaction

The users as stated in previous chapters range between locals (children, families and volunteers) and refugees (children and adults). With this diagram, a clearer understanding of each user's intention within the landscape of the project is determined. Refugee children are able to meet local children at the playground area, where else adults, both refugees and locals can meet at the praying area and green spaces. Local volunteers are also able to participate in interactions with refugee children and adults through the medical and educational program spaces that are located within this project.

6.2 Design Development

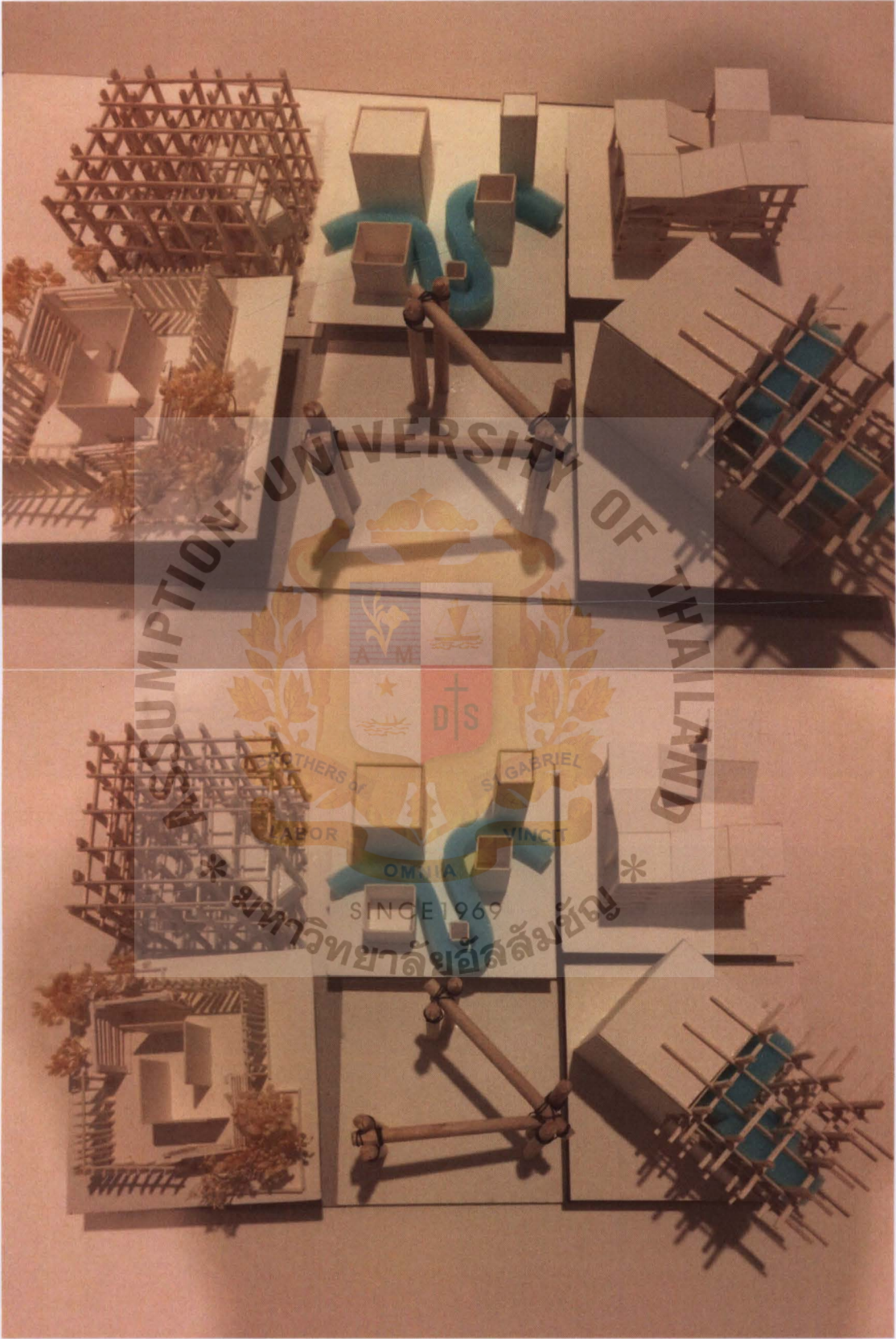


Figure 6.1.4. Concept Models; COLLABORATIVE COEXISTENCE

6.2. Design Development

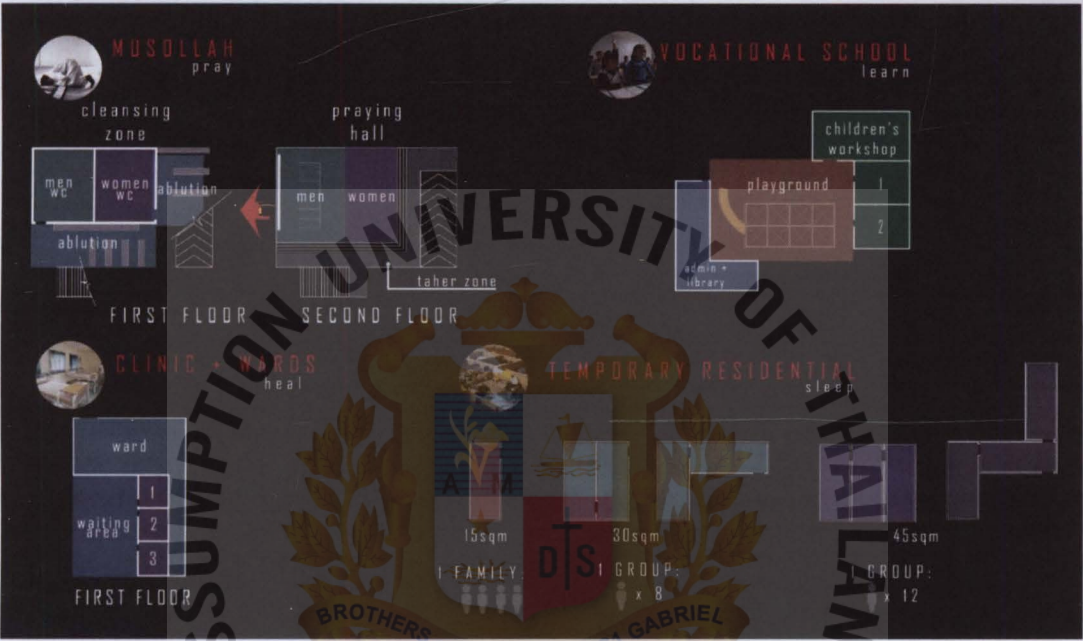
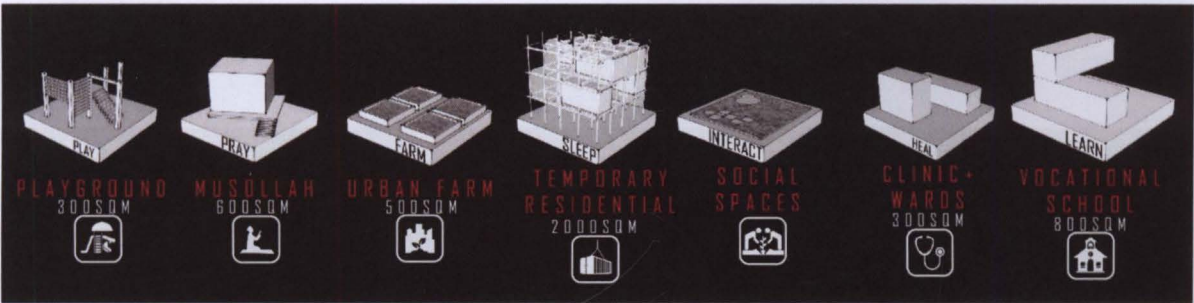


Figure 6.2.1. Program analysis

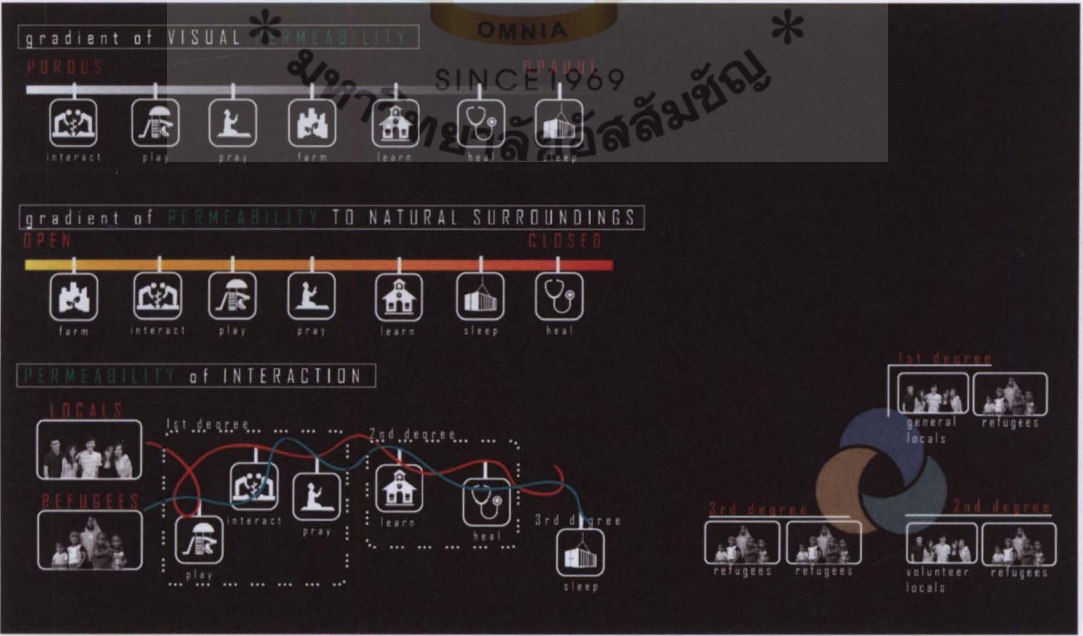


Figure 6.2.2. Program analysis reflecting concept

Responding to the concept that has been developed, a program criteria matrix is made to further understand the needs of each program

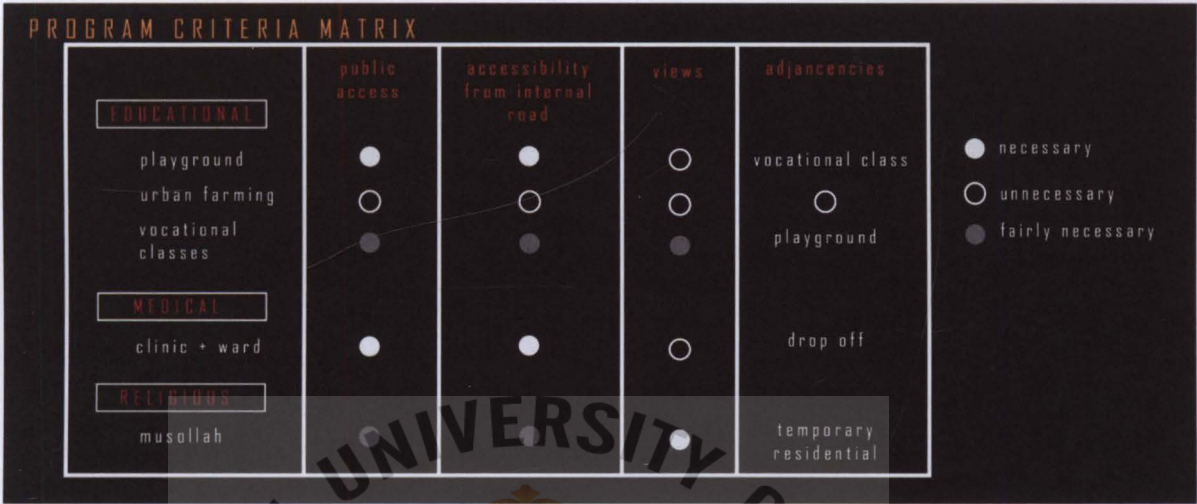


Figure 6.2.3. Program Criteria Matrix



Figure 6.2.4. Zoning of Site

6.2.1. Schematic Zoning 1

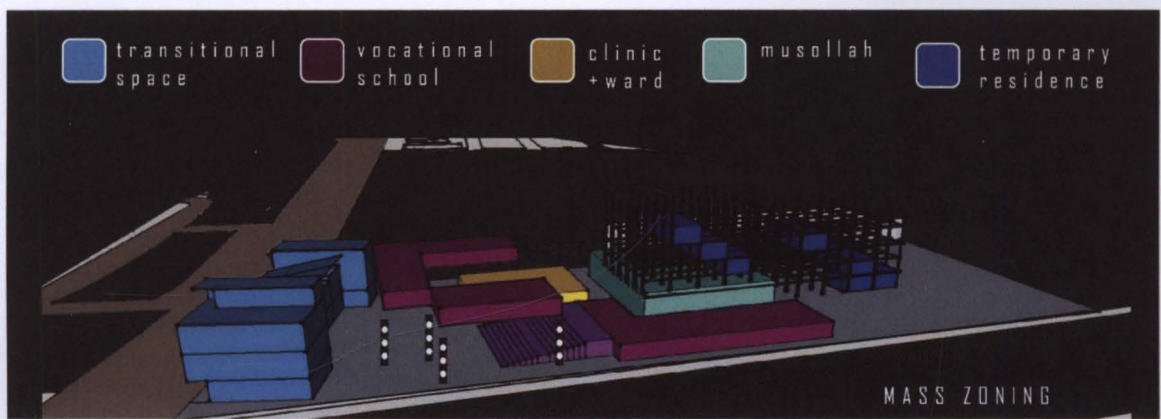


Figure 6.2.1.1 Diagram of schematic 1



Figure 6.2.1.2 Floor plan of schematic 1

Schematic 1 explores the ability for the Musollah to be the central program that allows users to be pulled within the site. Each program is fragmented to allow for circulation spaces to act as interaction zones. A slow event stairs allow users to experience higher floors equally.

6.2.2. Schematic Zoning 2



Figure 6.2.2.1 Diagram of schematic 2

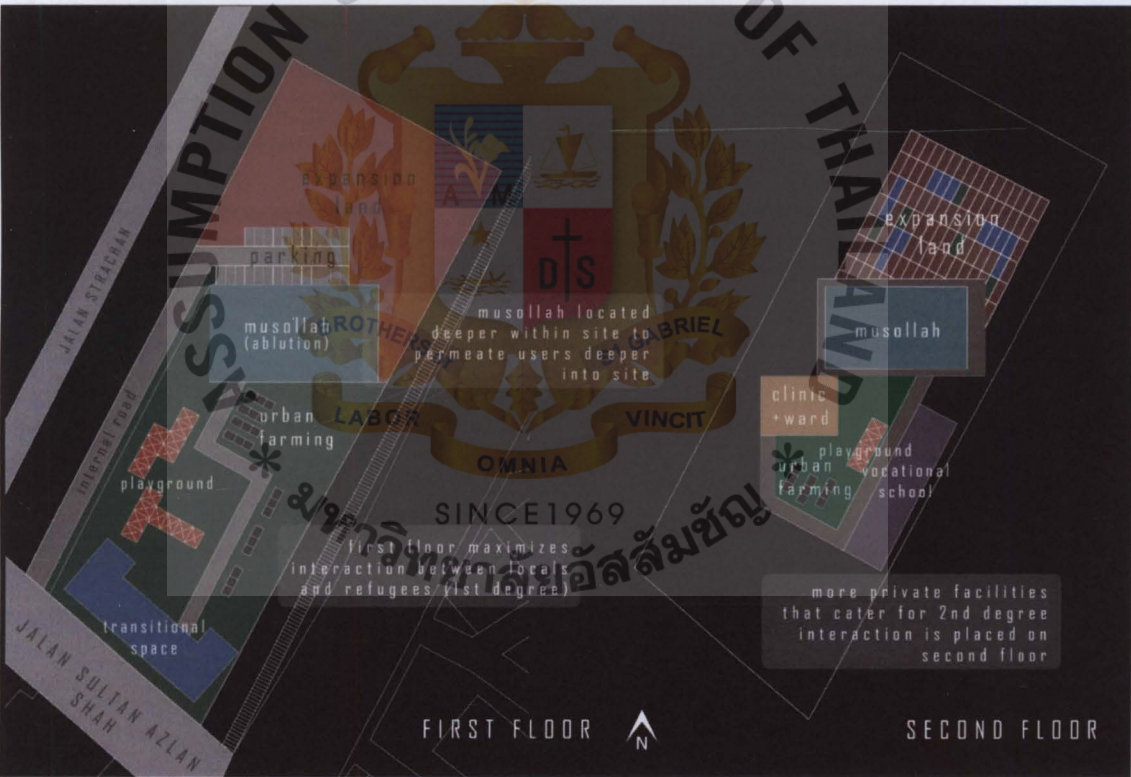


Figure 6.2.2.2 Floor Plan of schematic 2

Schematic 2 explores using the ground floor to maximize interaction between locals and refugee. Public spaces that focuses on more private interaction (2nd degree) is located on higher floors) to allow for a sense of security. By arranging open social spaces on the first

floor, users who come to utilize the space are able to freely gather without fear of disturbing more private programs.

6.2.3. Schematic Zoning 3

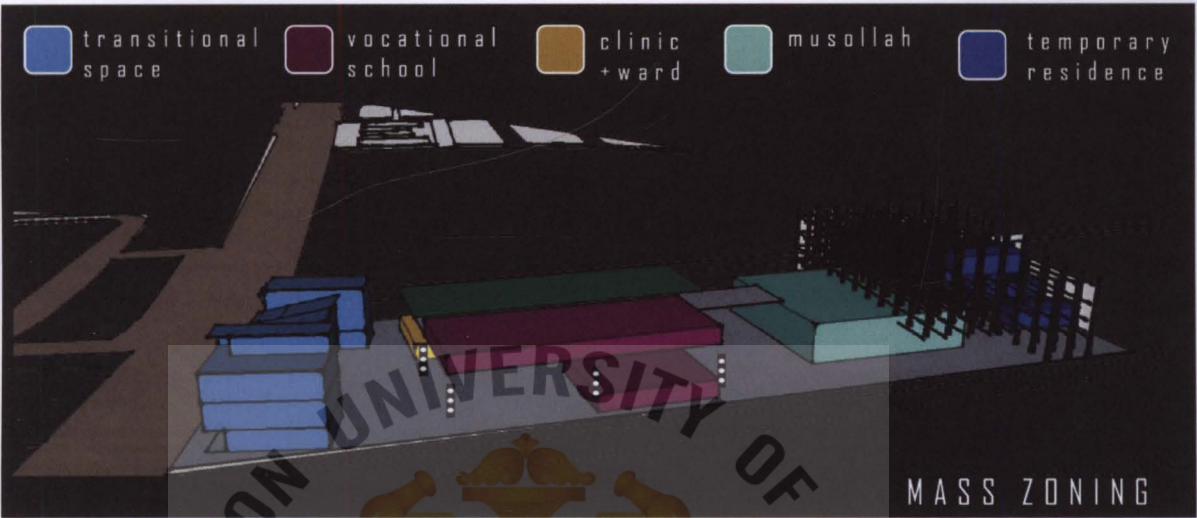


Figure 6.2.3.1 Diagram of schematic 3



Figure 6.2.3.2 Floor Plan of schematic 3

Lastly, schematic 3 explores directing interaction spaces between locals and refugees onto higher floor to allow all users to permeate vertically. The ground floor spaces particularly focus on 2nd degree interaction between refugees and locals (volunteers). By shifting the open space to higher floors, users from both sides (internally and externally) are able to visually permeate each other better.



CHAPTER 7: DESIGN SUMMARY

7.1. Design Approach

To begin the design process of this project, a deeper analytical understanding of the needs of refugees as well as locals must be done. As this project's core focus is represented in its users and existing surroundings, a more in-depth understanding of the surroundings will help strengthen its cause.

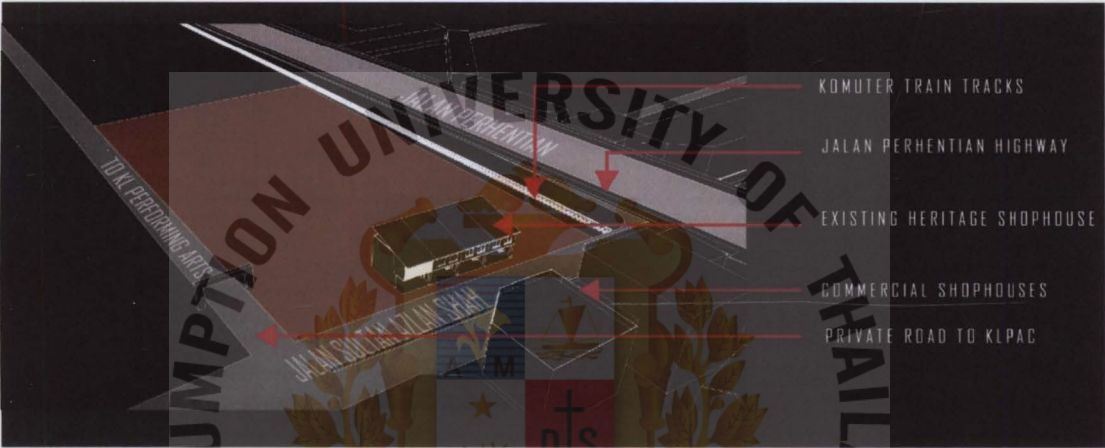


Figure 7.1.1 Surrounding built environment

Based on Figure 7.1.1, it clearly shows the relationship between the site and its surroundings. As it is a working class residential/commercial area, the site is nestled by a main highway (Jalan Perhentian) as well as the long distance commuter train tracks. The road directly adjacent to the site is where most commercial spaces that houses office spaces as well as low cost small and family businesses.

7.2. Layout design

As seen in the final layout plan (Figure 7.2.1) the existing traditional shophouse are preserved and acts as a gateway into the project. The first enclosed building that can be seen is the educational center (vocational workshop) and

Figure 7.2.1 Final layout plan

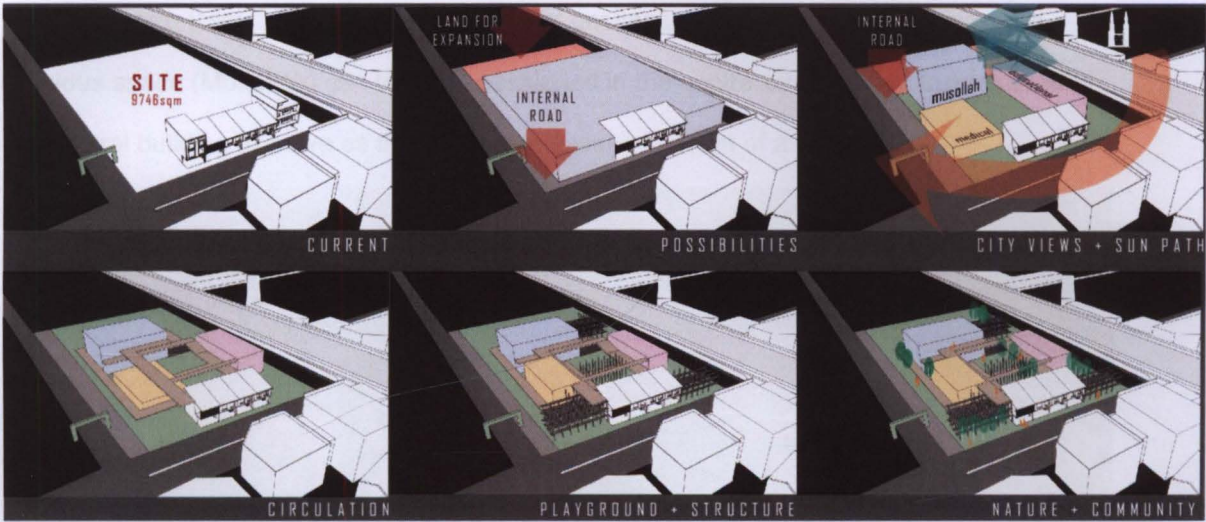


Figure 7.1.2 Transformation of form

With the zoning that was mentioned in chapter 6, the site is zoned to cater for the 4 main programs which are; religious, educational, medical and land for expansion during crisis.

Figure 7.1.2 displays the transformation of each form to be zoned according to the needs and requirements of each space. The site analysis is also implemented, in terms of the existing city views as well as sun path to determine the arrangement of outdoor and indoor spaces, especially for the playground area and urban farming plots.

7.2. Layout design

As seen in the final layout plan (Figure 7.2.1.), the existing traditional shophouses are preserved and acts as a gateway into the project. The first enclosed building that can be seen is the educational center (vocational workshop) and

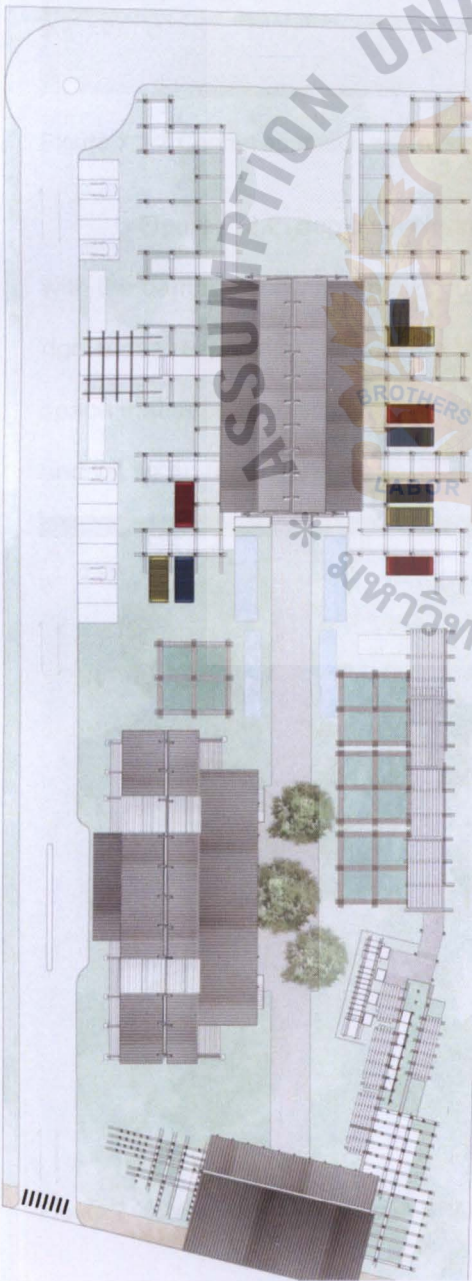


Figure 7.2.1 Final layout plan

medical centre (clinic and wards). As the visitor passes through the central pathway, the religious space (Musollah) can be seen positioned in the centre with bamboo trusses around the central building to serve as the expansion spaces in event of a crisis.



Figure 7.2.2 Central approach within site

Figure 7.2.2. depicts a clearer understanding of users walking in the central pathway with the bamboo children’s playground and education/medical centre located on the left and right sides respectively as well the Musollah in the center. This pathway acts as a gathering space that separates visitors from the city’s hustle and bustle as well as promotes greenery and within an urban landscape.

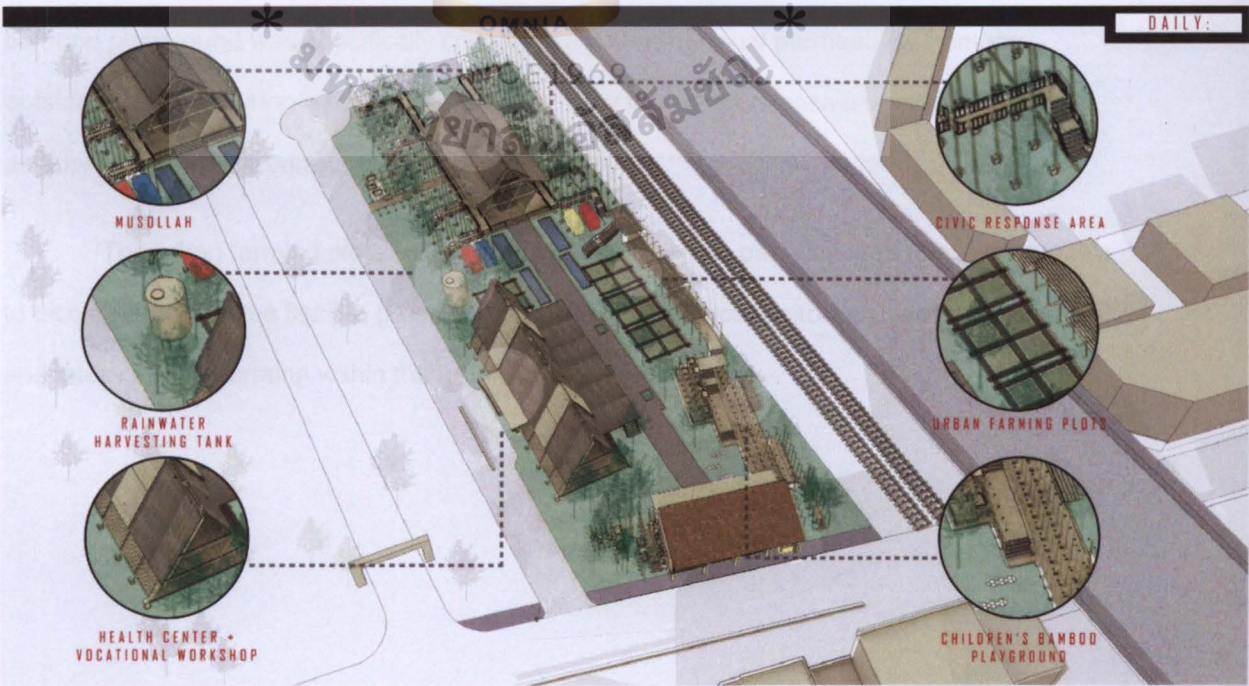


Figure 7.2.3 Axonometric view of A SPACE FOR THE DISPLACED

To have a better understanding of each spatial layout, the axonometric diagram shown (Figure 7.2.3.) displays precisely how each space correlates with the surroundings.

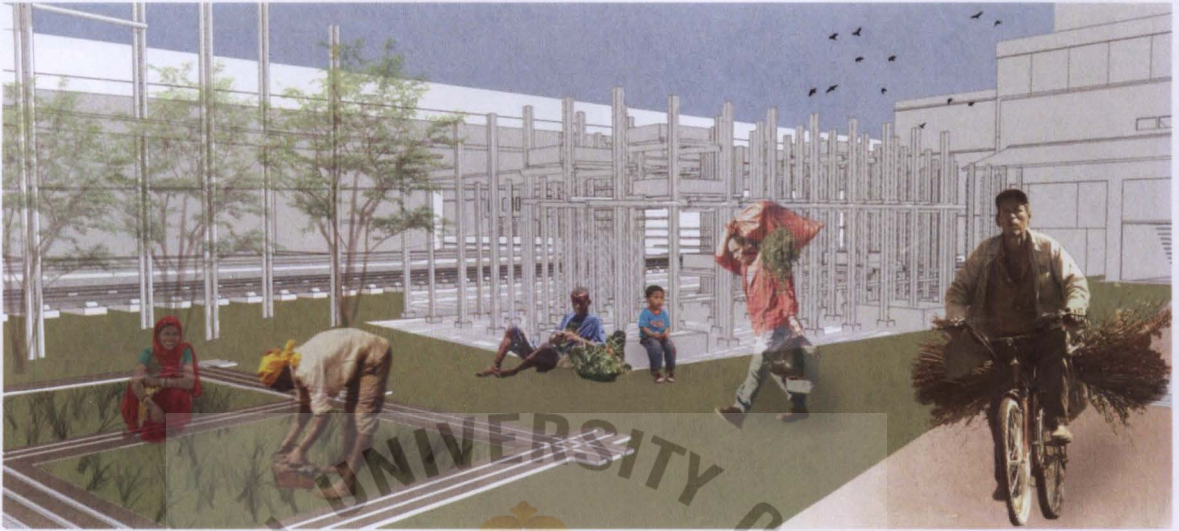


Figure 7.2.4 Urban farming plots and bamboo playground area

As children, both refugees and locals remain the priority users for this project, the bamboo playground located near the entrance of the site acts as a pull to draw users to explore further into the site. The play area is situated by the railway tracks to drown out the sound of train movement with the sound of children playing. This bamboo space acts as a privacy buffer as well to define the site within the surrounding landscape. The design of the bamboo playground was specifically chosen to allow semi-visual permeability from the outside in, thus ensuring a certain degree of privacy that is not offensive or may be regarded as appropriate for the surrounding communities.

The urban farming plots are located within the central pathway area to allow for locals to also benefit from the flexible green space. Refugee and local visitors can both participate and interact while farming within the urban surroundings.

7.3. Educational and Medical Centre



Figure 7.3.1. Educational centre (Vocational workshop)

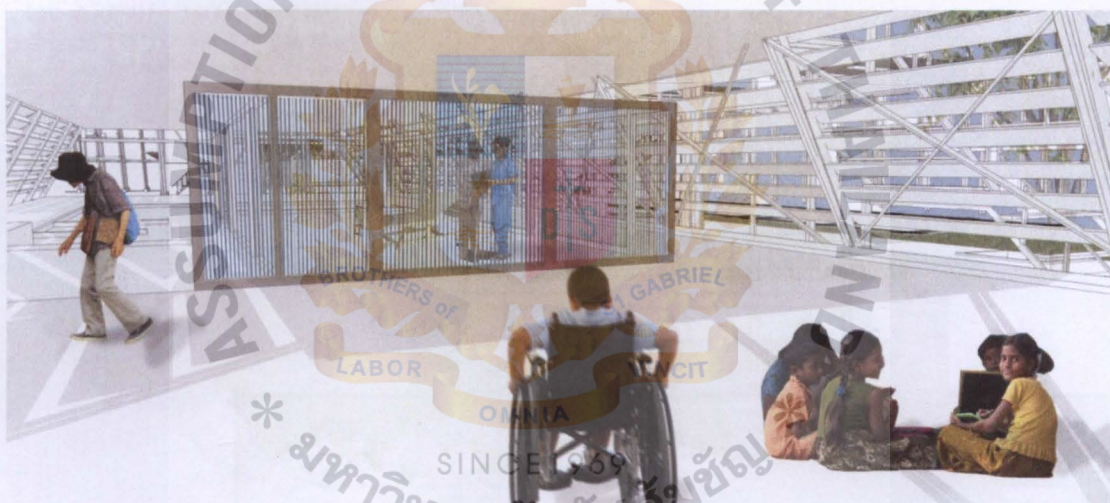


Figure 7.3.2 Medical centre (Clinic and medical wards)

Both vocational workshop and medical centre are located by the access road to allow for ease of access for users. The medical centre by regulation must have allow for patient drop off in case of an emergency, therefore the entrance for the clinic is located directly at the front access road. The main entrance is designed for wheelchair accessibility in consideration towards the users who may have mobility difficulty.

The vocational workshop however, can only be accessed from the central pathway. As the vocational workshop serves to be a platform for refugees to meet with locals who

volunteer to educate, a walking approach that best allows for this interaction would be through the green area.

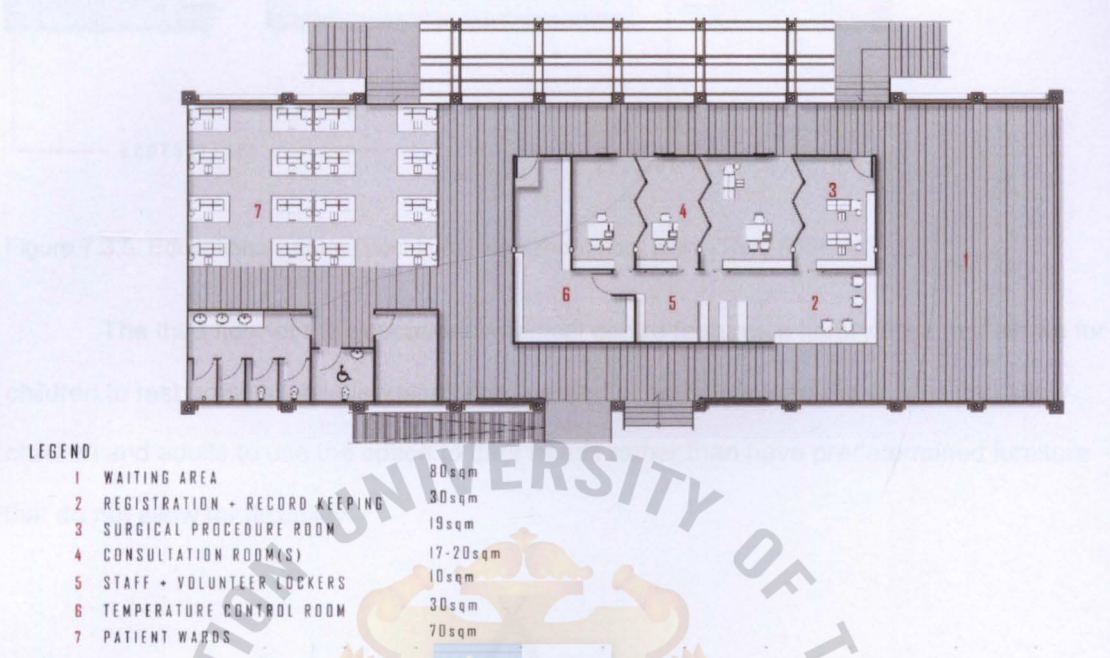


Figure 7.3.3. Medical center (Clinic and medical wards) floor plan –First floor

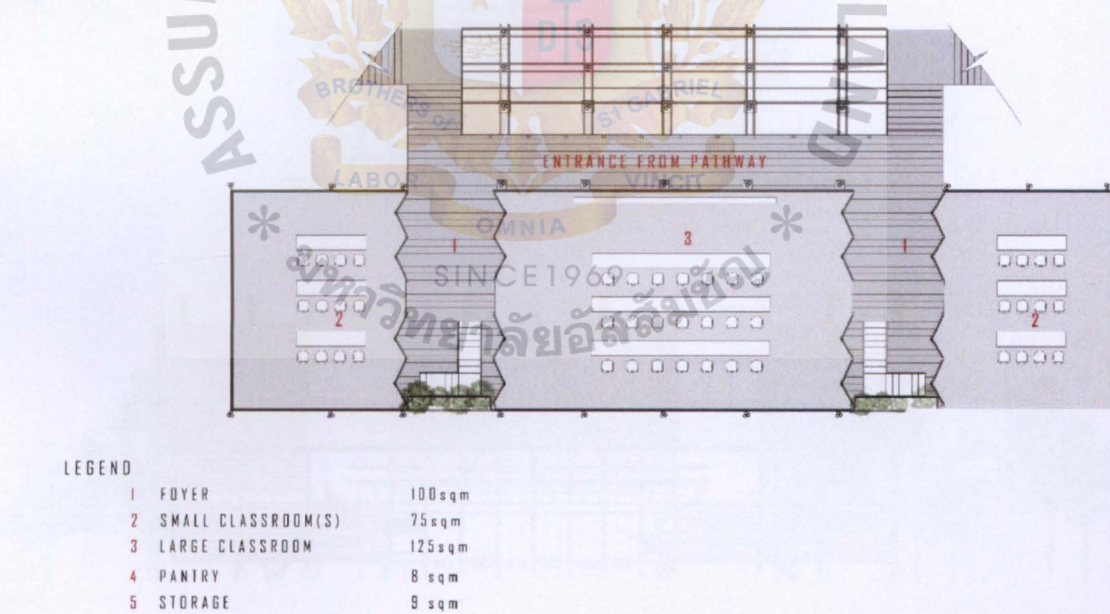


Figure 7.3.4. Educational centre (Vocational workshop) floor plan – Second floor

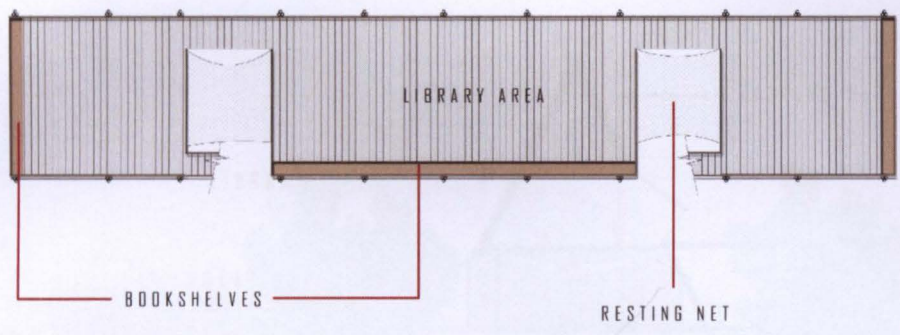


Figure 7.3.5. Educational centre (Vocational workshop) floor plan –Third floor

The third floor of the educational/medical centre features a library area that allows for children to rest on nets while learning. This method of proactive learning spaces can allow children and adults to use the space to their needs rather than have predetermined furniture that do not allow for flexibility.



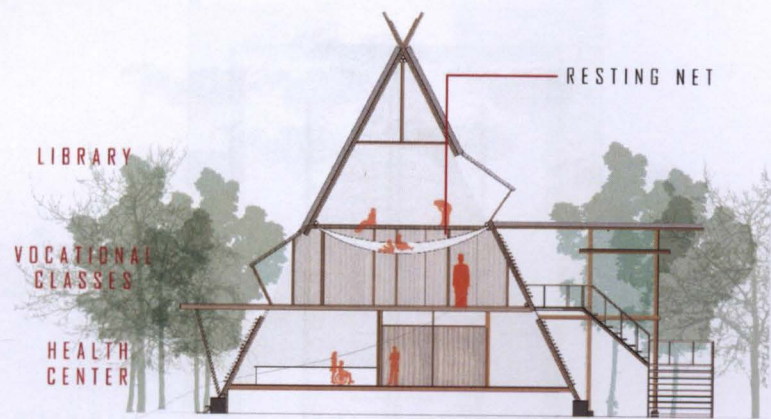


Figure 7.3.6. Elevations and section for educational/medical centre

7.4. Musollah



Figure 7.4.1. Musollah

As the Musollah acts as the heart of the project, it was centrally located within the site. Its identity and design is a gentle collaboration of the two cultures of the refugees as well as Malaysian locals.

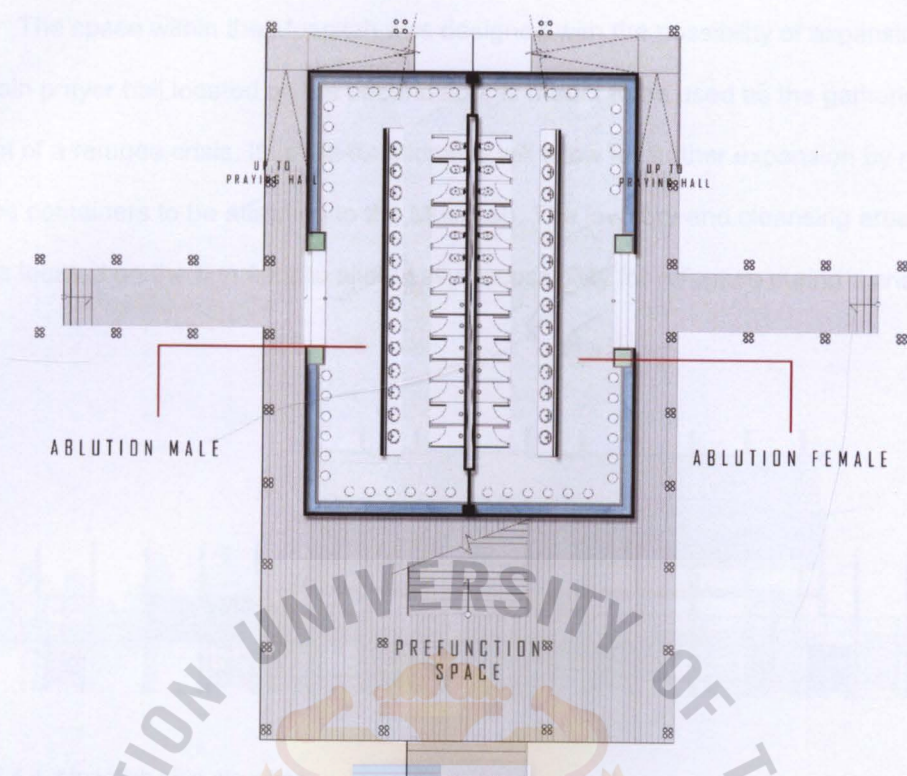


Figure 7.4.2 Musollah floor plan – First floor

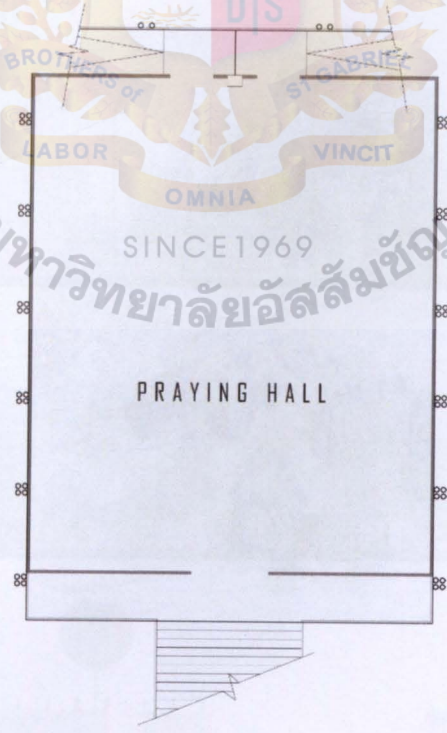
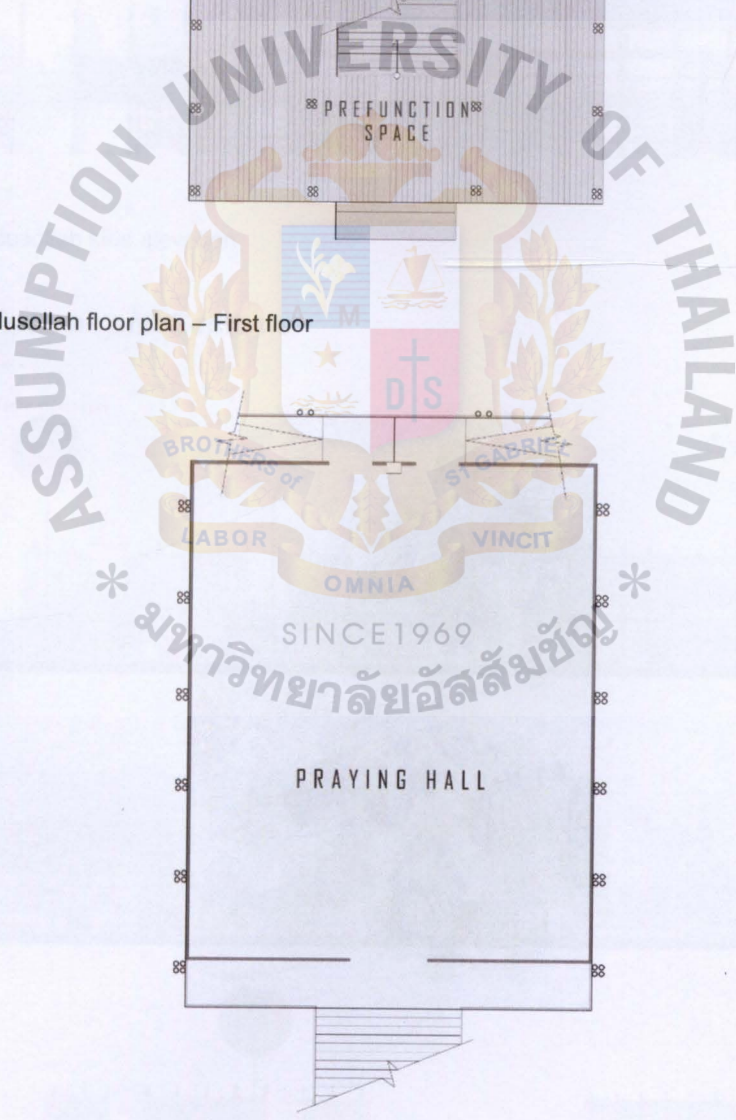


Figure 7.4.3 Musollah floor plan –Second floor

The space within the Musollah was designed with the possibility of expansion in mind. The main prayer hall located on the second floor is meant to be used as the gathering space in event of a refugee crisis. Its multi-functionality will allow for further expansion by means of shipping containers to be attached to the Musollah. The lavatory and cleansing area (Taher zone) is located on the first floor to allow easy accessibility for refugees during a crisis.

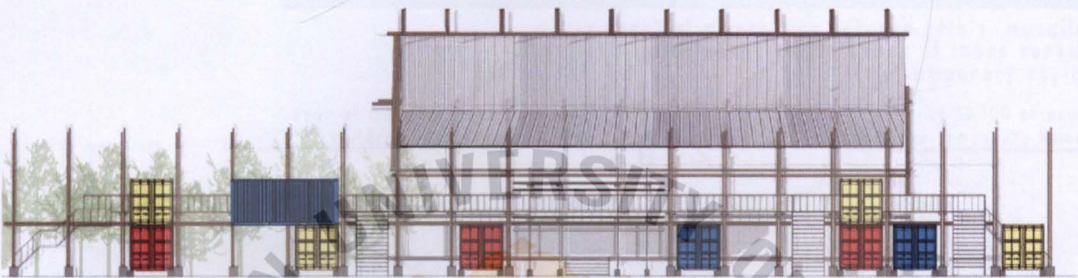


Figure 7.4.4 Musollah side elevation

7.5 Site Elevations and Sections

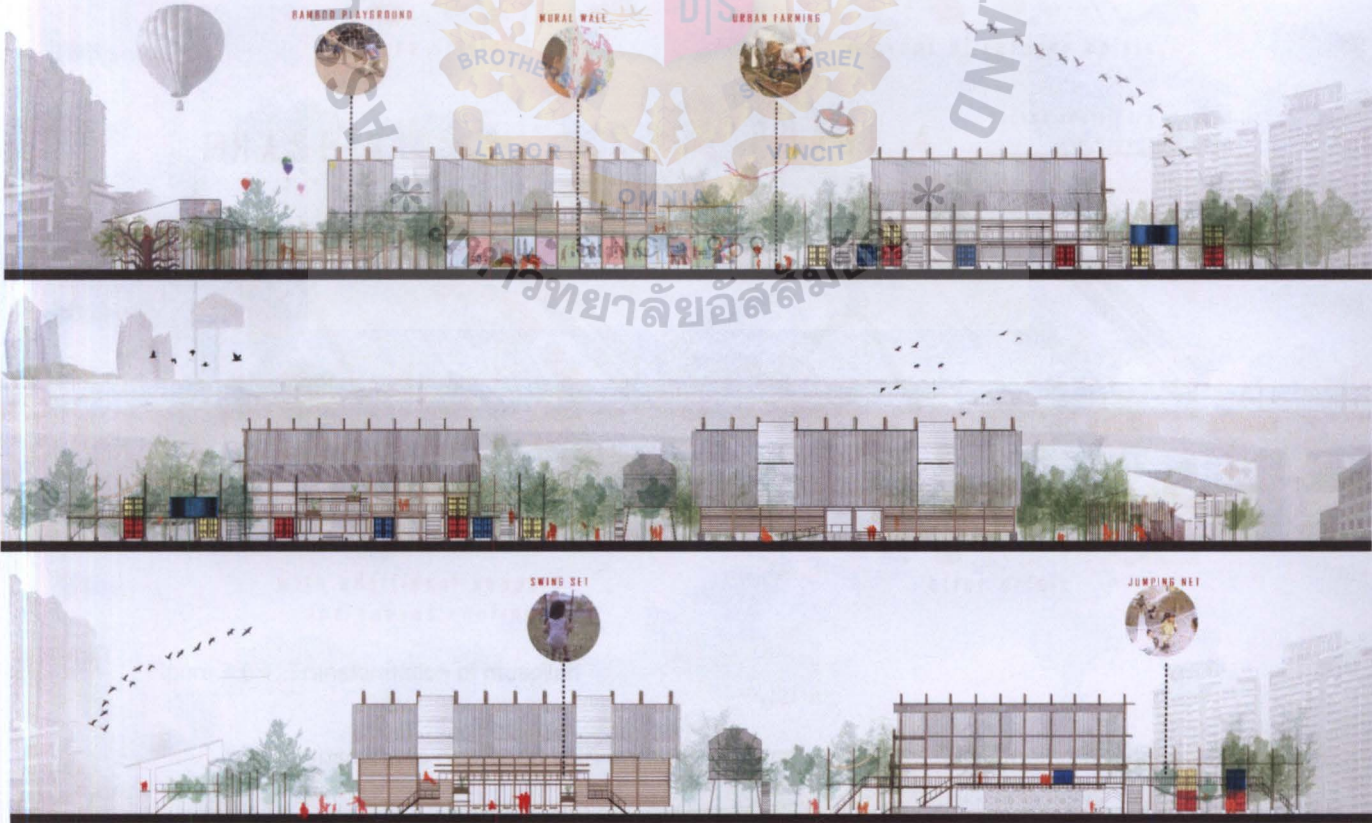


Figure 7.5.1. Site elevations and sections

7.6 Emergency

In event of a refugee crisis whereby people are displaced and require living assistance in Kuala Lumpur, the Musollah is able to adapt and expand according to the needs and number of refugees.

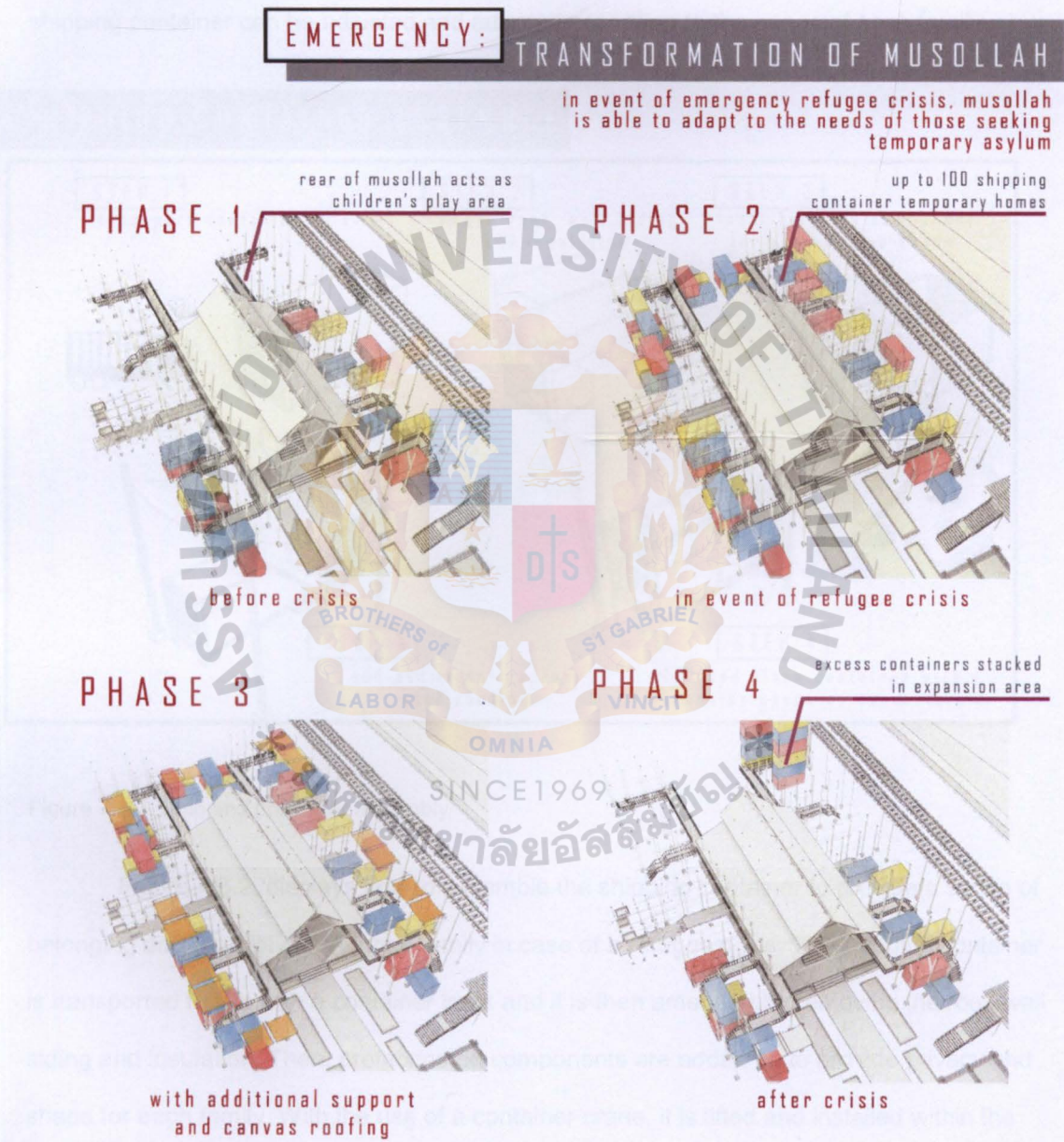


Figure 7.6.1. Transformation of musollah

The musollah is designed with bamboo expansion spaces surrounding it. These bamboo columns serve as an adaptable space that can accommodate up to 100 shipping containers. There are 8 permanent bamboo stairways located around the musollah which are

predetermined according to the suggested number of families that make up a community according to UNHCR (8 families of 6 people each make up one community).

The bamboo columns extend up to 8 meters high to allow for installation of additional support; walkways or canvas roofing that will provide a sense of belonging for refugees. As these spaces are meant for several weeks up to several months stay for the displaced, each shipping container can be adjusted and adapted according to the needs of each family.

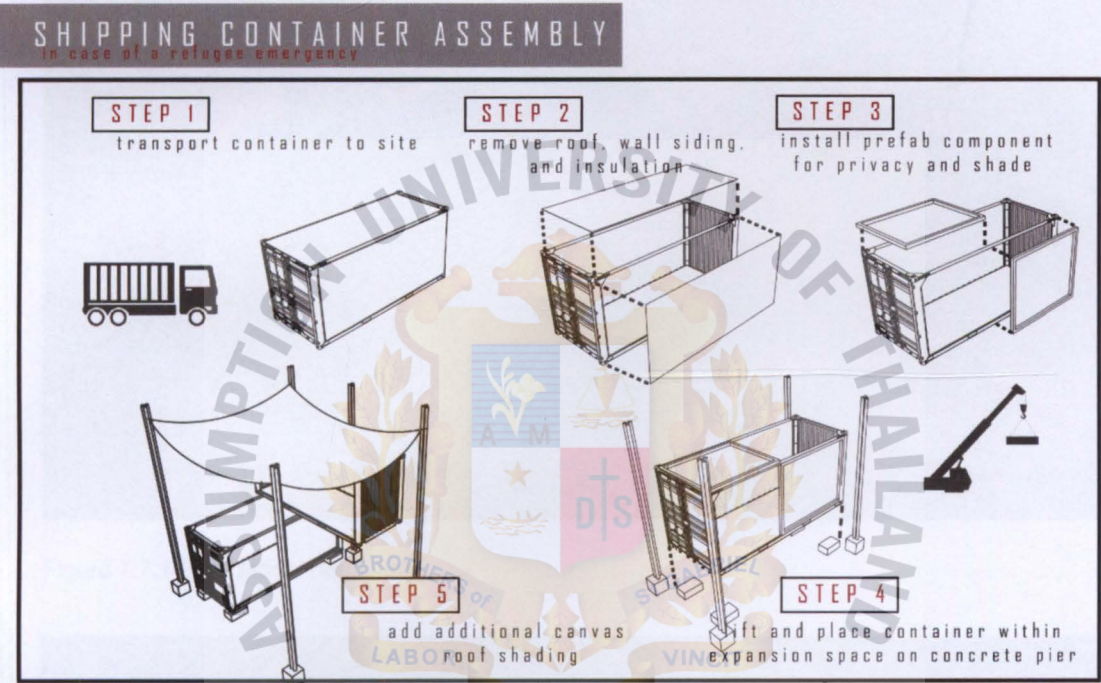


Figure 7.6.2. Shipping container assembly

Figure 7.6.2. displays how to assemble the shipping container to provide a sense of belonging and flexibility for refugee family in case of a refugee crisis. The shipping container is transported to site with a container truck and it is then amended by removing the roof, wall siding and insulation. Then, prefabricated components are added on to provide privacy and shade for each family. With the use of a container crane, it is lifted and installed within the expansion space of bamboo. Additional shadings or canvas roofing can be installed on the bamboo to provide protection from harsh tropical weather.

7.7 Model photos



Figure 7.7.1 Final Model (Musollah)

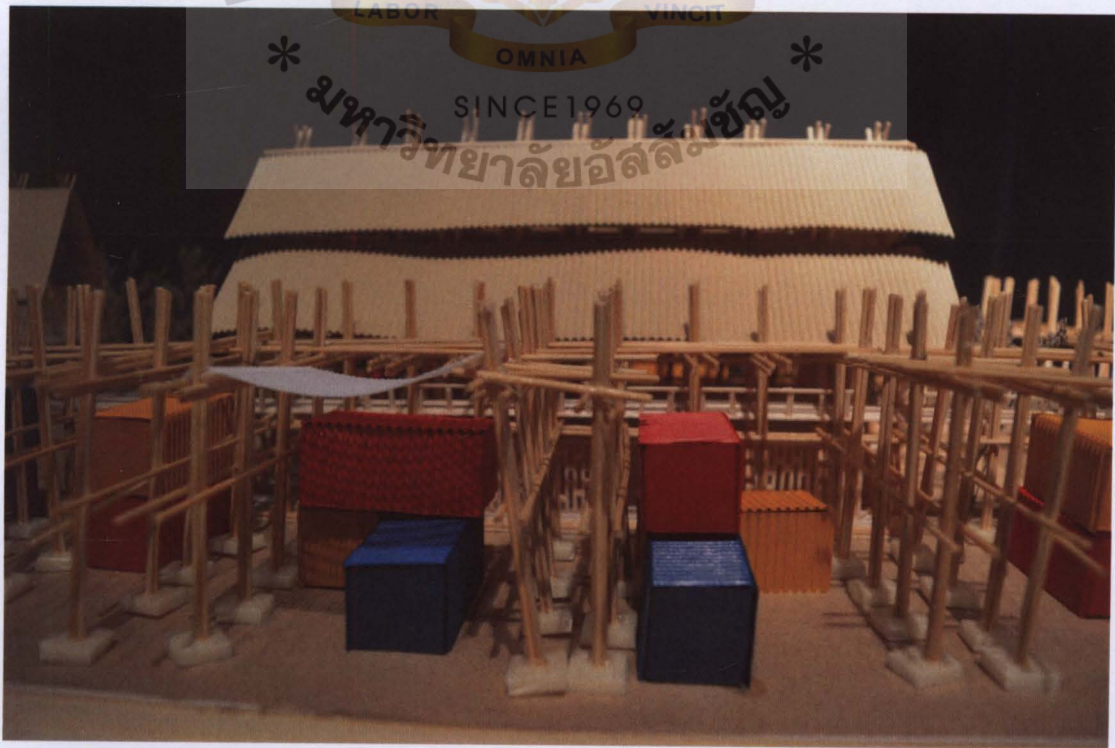


Figure 7.7.2 Final Model (Musollah)

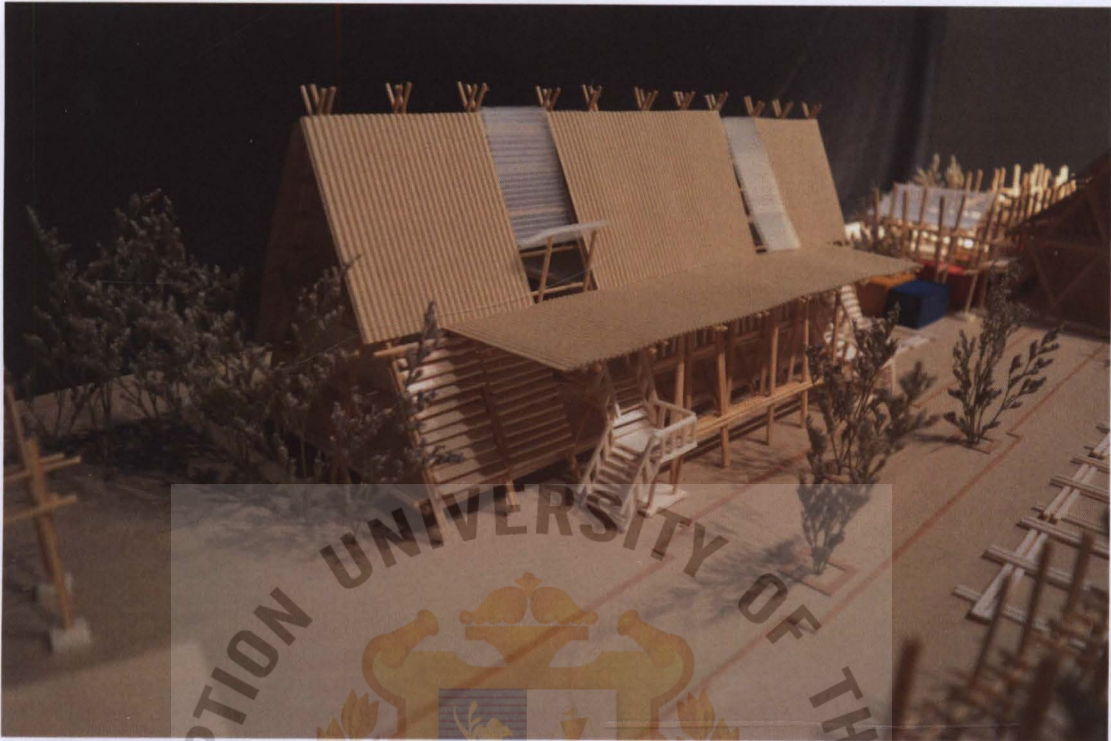


Figure 7.7.3 Final Model (Educational/Medical Centre)



Figure 7.7.4 Final Model (Bamboo Playground Area)



Figure 7.7.5. Study Models- study of form

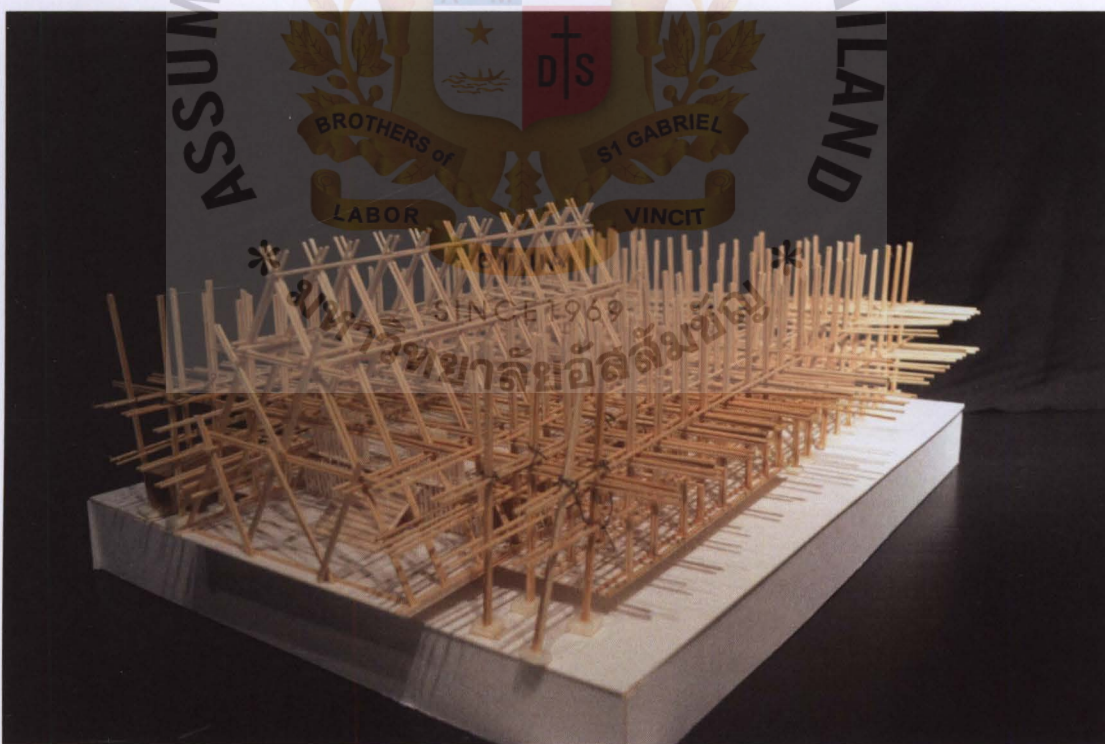


Figure 7.7.6. Study Models- structure of bamboo

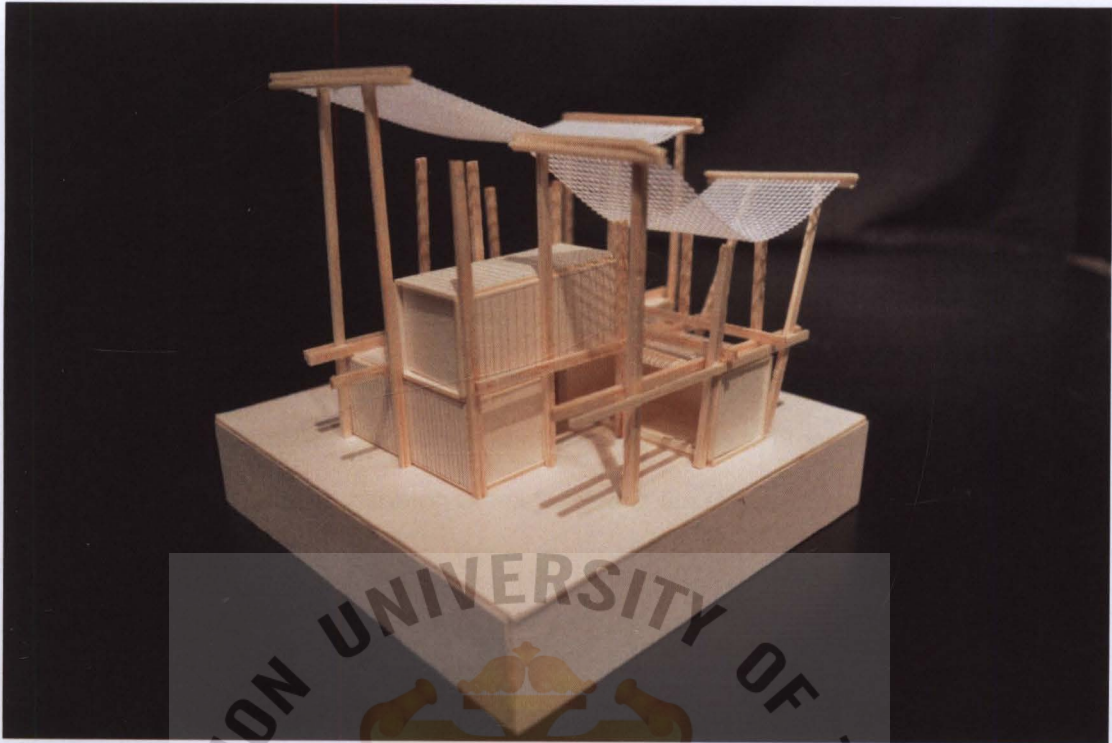


Figure 7.7.7. Study Models- expansion living spaces

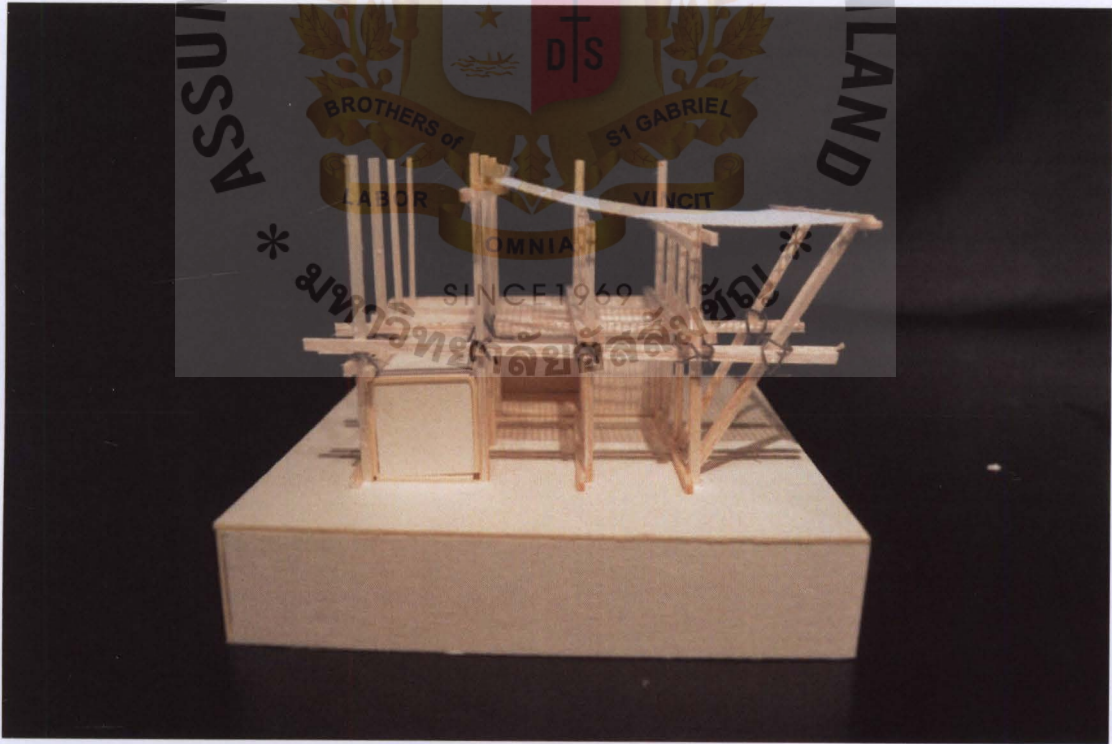


Figure 7.7.8. Study Models- expansion living spaces

CHAPTER 8: THESIS CONCLUSION

As this thesis project comes to a completion, the consensus that has arisen is the true need to provide sustainable architectural solutions to assist with disaster management issues. This project explores the possibility of using under desired materials to act as temporary homes for the displaced while also being considerate towards the existing cultures of surrounding communities. The core idea of this project was to propose a platform for interaction and collaboration between two cultures that are similar in many ways.

Architecture should be designed to focus on improving the lives of those in need rather than to just provide new unfulfilling architecture within the built landscape. With the evolution of architecture over time, there is a growing need for more social based designs, to alleviate living situations within the lives of the everyday man.

Due to the sensitivities of the refugee crisis, this project aims to act as a beacon of optimism for those in need of humanitarian assistance, as well as on a smaller scale bring awareness to a taboo subject that is not highlighted in the media or through education. By encouraging communication about this issue from an architectural perspective, the promise of a better future for everyone; whether refugee or not may take place.

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